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Illustrations OF HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

ST. GEORGE'S HOSPITAL.

A SERIES OF FIVE CASES OF SCALP-WOUND.

By G. F. COOPER, Esq., Surgical Registrar.

CASE I. T. B., aged 21, was admitted on September 29th, under the care of Mr. Hawkins. Just before admission, he had fallen from a loft on to his head, a distance of about twenty feet; but was not stunned. On admission, there was a large scalp wound, reaching from the external angular process of the left frontal bone to the middle of the parietal suture, and thence to the left side of the occiput, so making a right angle; and this flap was torn off the pericranium downwards as far as the ear. There was a small piece of bone exposed at the left side of the frontal bone. The wound was a pretty clean cut, and was directly strapped up. On the next day he was rather drowsy; but had no great pain in the head. The pupils were regular, and acted well. The wound had almost entirely healed, but there was some œdematous swelling at its lower portion where the bone was exposed. The wound was torn open for about an inch in length to give free exit to any confined matter, and a poultice was applied.

October 1st. The wound, at its lower part, was discharging freely. There was a little erysipelas about the left side of his face. He was ordered a purgative.

October 5th. The erysipelas had gradually subsided, and the wound looked very healthy. The poultice was omitted, and simple water-dressing applied.

On the next day the wound burst out bleeding, which somewhat hindered the small remaining portion that was then unsound from healing; but from that date no untoward symptoms followed. The man was ordered tonics and good diet; and on the 28th he left the Hospital, quite well.

CASE II. G. C., aged 29, was admitted on March 17th, under the care of Mr. Hawkins. Just before admission he fell off the top of a cart containing gravel, the wheel of which passed over the right side of his head and shoulder. On admission, the upper half of the right ear was torn away from its attachments, and just in front of it there was a wound about the size of a half-crown, exposing the temporal artery, which could be seen beating; but not denuding the bone in any place. He had lost the sense of hearing on the right side since the accident. The wounds were brought into apposition with silver sutures, and water-dressing was applied. There was a fracture of the right clavicle, as well as of three or four ribs. He stated that he had been a very intemperate man. There were no bad symptoms, however, and the wound looked very well, till the 22nd, when he complained of being rather feverish. His tongue was furred. He had no appetite, and his skin was hot, but perspiring. There was a little redness around the wound. He was ordered salines, with Dover's powder.

March 24th. Last night he was rather delirious, and to-day his pulse was full, 120; the tongue was furred and tremulous. There was no pain in the head, but a little puffiness around the wound; otherwise it looked well. He was ordered salines, with twenty minims of tincture of opium every four hours.

March 25th. Last night he was very riotous and delirious; but, to-day, was rational when spoken to. There were some twitchings of the left side of his face; his skin was hot; the tongue was brown and dry. He was ordered four ounces of gin daily.

March 28th. He was not so delirious as he had been; his pulse was 120. The skin was still hot, and the tongue dry and brown. He sweated a little, but had had no rigors. There was more puffiness about the scalp, so a few incisions were made to set free any confined matter there might be. He complained of pain in his left groin and hand, and whenever he was moved he experienced great pain, which ran up the left side of his thigh and body, causing them to become at the same time contracted and rigid.

On the next day an abscess was opened in the left thumb, and there was more fulness of his left hip joint. He sweated profusely. The gin was increased to six ounces, and more porter was given.

March 30th. His right wrist-joint was opened, and much thick pus set free.

March 31st. He had become more delirious. He never had had any pain in his head, and when spoken to he answered rationally, and never had a rigor. The wound in his head was dry and sloughy. Fresh abscesses showed themselves in different parts of his body, and early on April 3rd he sank.

POST MORTEM APPEARANCES. The right ear was torn away from the head, and there was a large sloughy wound there, not exposing the bones, of about the size of a crown-piece, in the centre of which the meatus auditorius was seen. There was no injury to the tympanum, but there was a minute opening in the membrana tympani, which perhaps had existed before the accident. The cranial bones were uninjured. A small patch of the dura mater, corresponding to the scalp-wound, of about the size of a sixpenny piece, was sloughy; and the cortical tissue of the brain was softened to about the same extent, and to a slight depth. The membranes were here united to each other. The rest of the brain was healthy. The right clavicle was fractured; the fragments being bathed in a large quantity of offensive pus. The third, sixth, and eighth ribs were also fractured, and their fragments were likewise bathed in offensive pus. The lungs and abdominal viscera were healthy. Both hip-joints and the right wrist-joint were also filled with pus, of the same offensive character.

CASE III. J. H. aged 64, was admitted on July 21st, under the care of Mr. Tatum, for a scalp-wound about four or five inches in length, on the left side of the vertex, from which there was much hæmorrhage at the time. No bone was exposed, and the wound was a pretty clean cut. It was caused by his being thrown out of a cart on to the kerb-stone. He was not stunned by the fall. He had always been very intemperate.

July 23rd. He was delirious and noisy; evidently suffering from delirium tremens. He was ordered half a drachm of tincture of opium every four hours, with good diet and porter. The wound on the head had almost entirely healed by the first intention.

July 25th. He was rather quieter, but still very stupid. The scalp about the wound was puffy, and two days afterwards there was diffuse cellular inflammation beneath the occipito-frontalis, for which the house-surgeon made free incisions, which somewhat relieved him.

August 2nd. He had now become more delirious, constantly attempting to get out of bed, and was very slightly sensible. The whole of the scalp from the occiput to the middle of the forehead was undermined by a thin, unhealthy matter, which was discharged in large quantities from the wound. A small portion of the right parietal bone was now exposed. He had no sleep; his appetite was very poor; tongue dry and brown; pulse 120, and very weak. On the next day, he was ordered eight ounces of brandy daily, and as he had some diarrhœa, chalk and opium mixture.

August 5th. A small slough had now formed on the lower part of his back. There was more suppuration about the wound, and even sloughing of the integuments themselves had commenced. This sloughing gradually increased, and the man became daily more and more exhausted. No fresh symptoms showed themselves, and on August 12th he sank.

POST MORTEM APPEARANCES. A large portion of the scalp had

sloughed away, leaving the bones exposed. The visceral surface of the dura mater was smeared with lymph; the external surface was healthy. There was a considerable effusion of lymph and sero-purulent fluid in the sub-arachnoid space. The brain was in all respects healthy. All the other viscera were healthy.

Case iv. J. C., aged 40, was admitted on May 14th, under the care of Mr. Hawkins. At twelve o'clock of the night previous to his admission, he was standing at the bar of a public house, drinking some gin and water, he having had something to drink before; but his friends stated he was sober, when he suddenly fell backwards, and struck the back part of his head against a wall. When admitted, at 11 a.m., he was perfectly insensible, and his breathing stertorous, he having been in this state, his friends said, ever since the accident. There was an incised wound, about one inch in length, over the middle of the right parietal bone, but it did not lead down to bone, neither could any depression or fracture be detected. He had passed no urine since the accident, but his bladder did not appear at all distended. Both pupils were regular, and rather contracted, but they were constantly changing; the conjunctiva was insensible; the skin cold; pulse 96, and scarcely to be felt. There was whiffing from one of the corners of his mouth, but no paralysis. Five grains of calomel was directly put upon his tongue, and his head was shaven. At 3.30 p.m. he was becoming sensible, and answered when spoken to.

On the following day he was quite sensible. The pulse was 95, quiet. He had no pain in his head. The wound was healed.

May 17th. There was a little puffiness and pain around the wound, but they had disappeared by the next day.

May 19th. At 4 p.m., and 12 (midnight) yesterday, he had rigors, lasting each time for half an hour, and followed by profuse sweatings. To-day he complained of great general headache; the pulse was 80, soft; skin perspiring; tongue white, and rather furred. Three grains of calomel and five of Dover's powder were given at bed-time, and a senna draught the following morning. After the bowels had well acted, all these symptoms left him, and he had no return of them; on the 25th, he left the Hospital, quite well.

Case v. Johanna B., aged 59, was admitted on February 5th, under the care of Mr. Tatum. This woman was knocked down by a butcher's cart, the wheel of which passed over the left side of her head. She was immediately brought in for a large scalp-wound on the left side of her head, extending from the external angular process of the frontal bone to about the middle of the temporal ridge; the bone being exposed for the space of about a crown-piece, and the integuments being separated from the pericranium almost as high as the vertex, and below down to the ear. The parts, which were covered with mud, were cleaned, put into proper position, and strapped. The right ear was much lacerated at its lower part, a small piece of it having been torn completely off; and there was also a lacerated wound in front of it, over the right temple. The lower jaw was fractured in two places, corresponding in position to the bicuspid teeth, the intervening portion being quite loose. There was a considerable bruise just above the left mamma, but no fractured rib could be detected. There was no concussion of the brain. Her pulse was very slow and weak. She was ordered carbonate of ammonia with chloric ether, in camphor mixture, every four hours; with five ounces of port wine, and three of brandy. On the 7th, there was much erysipelas and swelling of both eyelids and left side of the face. The wound had become sloughy, and there was much puffiness around it, especially behind. She was very low, and had no appetite; but there was no sickness, nor any pain in the head.

February 9th. The erysipelas was still considerable. She had much bronchitis, having had it to a trifling extent for three weeks previous to her admission. There was great difficulty in bringing up the expectoration; but her breathing was relieved by the sitting posture, and after the application of a mustard poultice.

From this time her breathing became more difficult, and at times she was almost choked from the bronchitic expectoration that she had not the power of bringing up. The wound of the head became excessively sloughy and offensive, the matter burrowing much beneath the integuments, especially behind. She was supported as much as possible by beef-tea, brandy, etc.; but she gradually sank, and died on the 11th.

Post Mortem Appearances. There was a large sloughy wound on the left side of the head, in which a great part of that side of the frontal bone was exposed. Another wound also existed on the right side of the head, just in front of the ear, which was greatly lacerated. There was a quantity of very offensive pus in the cellular tissue, beneath the tendon of the occipito-frontalis. On removing the skull-cap, it was found that a small piece of the inner table had been slightly separated from the rest of the skull, at the anterior inferior angle of the left parietal bone, by a fissure running obliquely through the diploë. The effused blood on the edges of this fissure clearly showed that it had been produced during life. The fragment of the inner table so separated was about the size of a shilling. When found, it was slightly displaced inwards; but this might have been a result of the sawing, as the section ran through it. The brain seemed quite healthy. The lower jaw was found fractured in two places. The lungs were healthy, except considerable injection of the lining membrane of the bronchi.

Remarks. These five cases will point out most of the pathology of, and complications that are met with in, scalp-wounds. All of them show the two most common and almost invariable seats for the wound to take place; namely, firstly (and this is by far the more general of the two), in the loose cellular tissue, between the occipito-frontalis and the pericranium; and secondly, between the latter and the bones, where the adhesions, too, are but slight, except at the situation of the sutures.

The first case illustrates what extensive lacerations may occur in the scalp, and yet, on account of the very free supply of blood to that part, union may readily take place.

The second case appears to be one of those where contusion of the bone accompanies a simple scalp-wound. In these contusions, it is in the diploë that the mischief occurs; inflammation commences in it, which soon passes on to suppuration; and, on account of the very free communication its vessels have with those of the meninges of the brain, the latter become secondarily affected. It is also due to this suppuration taking place within the diploë, where, too, there are such large veins, that absorption of pus into the circulation of the blood readily takes place, and secondary deposits follow.

The third shows, when suppuration and sloughing beneath the occipito-frontalis does take place, how much more readily the pericranium is liable to become affected than the scalp itself; and this is easily to be explained, on account of the great difference there is between these two parts in their supply of blood. This case, too, is interesting from the great rarity of such extensive sloughing of the scalp.

The fourth is given to show how a surgeon may be deceived with symptoms of disease, especially in those affecting the head.

The fifth is interesting on account of the peculiar fissure on the internal plate of the skull, and no symptom whatever resulting from it.

WESTMINSTER HOSPITAL.

WOUND OF THE FEMORAL ARTERY AND VEIN.

By C. Holthouse, Esq.

In the British Medical Journal of May 7th, of the present year, there is reported a case of the above accident, which was under my care at the Westminster Hospital, and from which the patient was discharged cured on February 25th last. It may be interesting to know the condition of this man's limb six months after his discharge; he having been at work as a carpenter during nearly the whole of this time.

On August 12th, being out of employment, in consequence of the strike, he called on me, and the following note was made: "The sore on the heel has not yet cicatrised; there is some œdema of the foot and ankle; the internal and external saphena veins and their branches are larger and fuller than those of the opposite limb; the pulsation in the posterior tibial artery is less distinctly felt than in the other leg, but this may be partly accounted for by the œdema; there is no difference in the temperature of the limbs, though there was at first (the weather is very warm); the patient still experiences some numbness of the foot and calf of the leg, and cannot walk far or quickly, without bringing on an aching pain in the latter."

In the "remarks" which were appended to this case at the time of publication, a doubt was expressed as to its being the femoral vein which was wounded; but that it really was so, and that this vessel is now obliterated at the seat of the

wound, I think is proved by the evidences of obstructed venous circulation, which the above condition of the limb reveals.

Remarks. We were not aware, at the time of the publication of the above case, that there was any other on record in which the limb had been saved after a wound of both the artery and vein; but it appears that John Hunter made an endeavour, at any rate, to effect this object. In a manuscript copy of his lectures, from notes taken by Dr. John Clarke, with the inspection of which we have recently been favoured by the kindness of their present possessor, the following entry occurs:—"A. B. was working with a knife, and ran it into his thigh, and so wounded the crural artery where it passes through the third head of the triceps. A tumour was formed, with pulsation. A peculiar thrill arose in it. A tourniquet was applied, and a director passed into the wound. The parts were laid freely open; the artery found. A ligature was then made above and below the orifice. The vein bled, and was taken up too."

Unfortunately, the event of this case is not given; but it is more probable that the attempt to save the limb was successful than otherwise, from the very fact of the case being so dismissed, without any mention of gangrene or other evil consequence. At any rate, it is interesting to know that this great master of surgery thought it reasonable to attempt the preservation of the limb under these circumstances.

Original Communications.

PATHOLOGICAL AND THERAPEUTICAL CONSIDERATIONS RELATIVE TO INFLAMMATION AND FEVER.

By C. Handfield Jones, M.B., F.R.S., Physician to St. Mary's Hospital.

[*Continued from page* 940.]

5. *Various forms of Inflammation.* The most important distinction to be made between different instances of inflammation relates to the degree in which they approximate to the sthenic or to the asthenic type. On a due appreciation of this, the success of treatment wholly depends. In *sthenic* inflammation, the *tissue* of the part is prominently concerned, its nutritive force is deranged and perverted, rather than simply depressed; it is inapt for functional work, but highly resentful of stimulation. The latter, if powerful, may subdue the morbid state of the tissue, but if it fail to do this, exasperates it. Tonics that would induce contraction of the blood-vessels through their nerves, and so diminish the hyperæmia, irritate the diseased tissue, and increase the morbid action. The healthy play of the tissue in attraction and repulsion of blood is exchanged for morbid attraction, and so accumulation of blood takes place. The effective remedies are such as annul this state of tissue-irritation, depressants, contrastimulants, or tissue sedatives as I have termed them. Thus antimony is an efficient lung-sedative in sthenic bronchitis or pneumonia, and colchicum an articular sedative in sthenic gout and synovitis. An excellent example of this form of inflammation is so-called acute eczema, which is aggravated by arsenic, and cured by leeches, lead lotion, salines, and antimony.

In *asthenic* inflammation, on the other hand, the tissue is much more quiescent, much less susceptible of irritation, and tolerant of stimuli. It takes no notably active part in the inflammatory process, but (if a surface) simply allows the transudation of cell-developing exudation. The phenomena are chiefly dependent on vaso-motor nerve paralysis, and consequently diminish and cease under the use of nervine tonics. Thus quinine is most beneficial in asthenic pneumonia. Arsenic in asthenic rheumatism and eczema. It is most striking in the latter disorder to find the hyperæmia, exudation, and heat of skin, cease under the tonic remedy; one is involuntarily reminded of the result of galvanising the divided sympathetic nerve. The sthenic character is commonly exhibited in the earlier period of inflammation, and is replaced by the asthenic in the later. Either, however, may exist during the whole course of the disease. Sthenic inflammation is usually excited by some locally acting irritant, but it may be produced as well as asthenic by vaso-motor nerve paralysis, or may even originate spontaneously as in whitlow. The resemblance of the visible phenomena of sthenic and asthenic inflammation may be so close, that nothing but careful testing with remedies can make the distinction possible. Like chemical reagents, our drugs appeal to forces we cannot otherwise observe. It is, however, always to be remembered, that the perfectly typical cases of disease are rare, and that the majority are mixed, or intermediate between various types, and partake most of one or other. The term *substhenic* would designate correctly many such instances.

6. The modifications imposed on inflammation by the locality in which it occurs, the tissue which it affects, are noteworthy. In serous tissues, it is prone to spread over the surface, and to pour out copious effusions, which may be serous, fibrinous, or purulent; these mostly are more or less mixed. Even rheumatic inflammation commonly causes suppuration in this tissue. In mucous tissue, inflammation is also spreading, and gives rise early to exudation, which, as long as the basement surface is entire, contains no large amount of albumen, but chiefly the characteristic slimy principle mingled with varying amounts of pus-corpuscles and immature epithelial particles. The high vascularity of many mucous membranes, and the thinness and delicacy of their epithelium, very much promote the early occurrence of exudation of the fluid part of the blood, and even sometimes the escape of the solid corpuscles. In cutaneous tissue the spreading tendency is much less, and is chiefly manifested in asthenic forms of inflammation, as for instance, erysipelas. Exudation does not occur to any notable amount as long as the epidermis remains attached. In the subcutaneous and areolar tissue, sthenic inflammation soon becomes circumscribed by fibrinous effusion, in the more central parts of which suppuration takes place. In asthenic inflammation, the morbid process is not thus circumscribed, and spreads often extensively, causing great mischief and peril. Solid masses of tissue, as liver, kidneys, brain, muscles, are far less prone to be the seat of suppuration than surfaces, or areolar tissue. One cause of this is, that in these dense textures exudation takes place much more sparingly. Another is, that large masses of tissue persevere more steadily in their normal nutrition than thin membranes, and are far less liable to deviate into inflammation.

Acute and chronic designate the rate at which inflammation proceeds. Acute may be asthenic, chronic may be sthenic.

7. *Reaction* (morbid) signifies that the vital forces of the part or system affected are not utterly or almost overborne and prostrated, but that they *resent*, and are stimulated after a manner by the morbid impression. It is most true there is no such thing as an intelligent striving of the natural forces against the cause of disease, to throw it off, as it were; the fact being simply that they are excited to unusual and abnormal manifestations. They are excited to increased action; but that action is not in the right direction, it is injurious and wasteful. Still it shows that the power of the tissues is not extinguished, that they are yet life-full. He who has stood by the bed-side of the patient in malignant dysentery or cholera, and painfully witnessed the utter non-response of the system to all remedies, or he who has been striving for a long period to upstay a weakly nervous system, that is evermore relapsing into debility and prostration, is quite rejoiced at the signs of good, outspoken, hearty reaction. There is hope to be able to calm and guide the one, there is almost a sense of despair in the attempt to raise and sustain the other. The signs of (excessive) *reaction* are essentially those of inflammatory or sthenic fever, viz., vigorous action of the heart, strong full pulse, hot skin, red lips, increased tolerance of blood-letting. Local reaction is equivalent to sthenic inflammation and its results. *Collapse*, on the contrary, is marked by debility, feeble-pulse, cold skin, blueish lips, diminished tolerance of blood-letting. Its local manifestation is gangrene.

Increased action is a term often used, and often I think not correctly understood. It is essentially the same as reaction above described. It is therefore clear that it does not mean real increase of healthy power, more vigorous functional action, but only a greater amount of action of some kind. Compared to healthy action, it is like a river bursting its banks and spreading destruction all round, as contrasted with the same stream duly restrained, irrigating meadows, and turning water-mills.

The above remarks have reference of course to morbid states. There is healthy reaction, as after a shower-bath; and healthy increased action, as when a gland or a muscle perform its functions vigorously.

8. *Causes of Inflammation.* If friction be kept up for some length of time on a part which has been unaccustomed to it, say the hand, as in rowing, inflammatory phenomena are produced. Blisters form on the surface, *i.e.*, the epidermis is

raised by an exudation of fibrino-serous fluid from the cutis beneath, which is unduly injected with blood. If the irritating cause be withdrawn, the hyperæmia gradually ceases, and the effusion is reabsorbed. Here we have a clear case of inflammation produced by a locally acting mechanical cause. Effects essentially similar can be produced by irritants of a different kind, as heat, mustard, cantharides, the poison of gonorrhœa, the galvanic current. It is a point worthy of remark, that the susceptibility to inflammatory irritation from the above mentioned agencies differs much in different persons. One person can bear a mustard poultice for half an hour or more, another not for five minutes; one person's skin is readily blistered by cantharides, another's with great difficulty; the novice's hand is soon made "raw" by the oar, the practised oarsman's not at all. All this implies a difference in the nutritive power of the skin in different individuals; in some it is easily deranged from its normal operation, in others it adheres to it pertinaciously. The same is true of all other tissues, if any one is easily deranged from its normal mode of life and nutrition, that part is the weak point, the one which disease is sure to assail. This local weakness may be congenital, or acquired in various ways. When the whole system is possessed of considerable resisting power to the various perturbing causes, the fortunate possessor is said justly to have a strong constitution. This is a very different thing from having great muscular force.

Traumatic inflammations, though usually on a much larger scale, are essentially similar to those above considered. The injury deranges the normal nutritive actions of the part, prostrating them at first in a greater or less degree, and subsequently diverting them into morbid attraction and retention of blood, or into this combined with more or less of vaso-motor nerve-paralysis; in other words, into sthenic or substhenic inflammation.

Another class of inflammations are such as are produced by the reception of a substance into the blood, which acts as an irritant on one or more parts. Thus arsenic absorbed from a wound, or mucous surface, inflames the stomach; cantharides, swallowed, inflames the urinary organs; and so on. The poison may be generated in the system, as that of gout, or inhaled as those of variola and erysipelas.

In a third class of inflammations, we may affirm that the exciting cause is some imponderable. When malaria causes dysentery; or influenza bronchitis, or diarrhœa; or when some unknown influence excites cynanche tonsillaris, we have instances of the kind in question. To say, without further consideration, that these are produced by the reception of some atmospheric poison into the blood, and that they belong to the preceding class, seems to me an assertion very weakly supported. It will be well worth while to attempt some closer inquiry into the possible or probable causation of these inflammations. It cannot be doubted that cold, or cold and damp, may produce such effects, yet it is equally certain that they are not the only or chief causes. Catarrhal and other inflammations constantly arise without any exposure to cold and wet. The agencies which give rise to malarious disease and influenza are quite unknown to us, and it seems at any rate prudent for the present to regard them as of a distinct kind from other demonstrable and ponderable poisons. They may be rather peculiar forces, or states of matter, than isolable substances. It may be of some advantage if we take the injurious action of damp cold as an illustrative instance of their action. Here we do not think of a poison circulating in the blood, but of an *impression* made on some part of the surface, which is resented by some internal part. This injurious impression may be scarcely felt at the time it takes place, and its effects scarcely perceived till some hours after. See a remarkable instance of the effects of unfelt irritation in Brown-Séquard's Lecture XI (*Lancet*, 1858, p. 572). This is more striking than analogous cases where the irritating cause (a worm) affected the mucous surface. Sometimes it is immediate in its action, as when the sufferer feels the cold strike to his chest. In the latter case the result stands in no relation with any cutaneous sensation that we are cognisant of, and it has often a peculiar enfeebling or paralysing effect. Before proceeding further, I would say that the opinion that cold causes inflammation by repelling the blood from the surface, seems to me a very insufficient account of its action. If this were true, the severe cold of the arctic regions would far more often excite internal inflammation than is found to be the case.

I will now adduce some actual instances of the effects produced by cold, and endeavour to interpret them so as to show their bearing upon the production of internal inflammations. A writer in *Household Words* gives the following description of the cold of the Black Sea, evidently from personal experience. "It is bitterly cold (thin penetrating rain falling every now and then.) That clammy deadly cold of these climates, against which no clothes seem able to protect you. It is a cold which is not felt in the chest, nor hands, nor feet, as our cold in Europe is; but it is sure to strike first at the stomach. You were well just now, and trying with all the philosophy at your command to be jovial under difficulties; suddenly you are seized with agonizing pains just below the chest. In vain you try to make light of it. You are obliged to lean for support against the first thing or person at hand. Your extremities have become chilled and useless; you sit and double yourself up, hoping something from warmth and quiet; at last you lie down, and writhe in the intensity of your pain. If you are driven to take brandy (hot brandy and water is best), you feel a peculiar sickness for some minutes, and then the pain slowly subsides; but it leaves you stupid and depressed for hours afterwards, trembling and nervous. The only way to give yourself a chance of escape is by winding some twenty yards of silken or woollen sash tightly round your loins and abdomen. It is the custom of the country, the dress of the peasant and prince, and you will soon understand it has not been adopted without a reason. This was the commencement of that sickness which carried off numbers of our troops. The doctors called it cholera; it was only cold." Without fully agreeing with the last sentence, I yet entertain no doubt that the effects so graphically described were really produced by damp and cold, and there can be no question that such an influence would powerfully promote the operation of cholera-poison. The protection afforded by the ample sash can only be explained, I think, on the view of its warding off the operation of cold, and this opinion is confirmed by Mr. R. Martin's authority. He writes "the ample turban and khummerbund meet our eye at every step; the former to defend the head from the direct rays of a powerful sun; the latter for the purpose of preserving the important viscera of the abdomen from the deleterious impressions of cold. The khummerbund is certainly a most valuable part of the dress, and one that is extensively imitated throughout India by Europeans, in the form of a cotton or flannel waistband worn generally next the skin." Similar effects of cold are not unfrequent in our own country. A very robust medical man stated to me that during exposure to severe cold in Scotland, he had several times experienced a sensation about his epigastrium, as if he had "a toothache in his stomach." It does appear to me, that in these common facts, evidenced by the habitual practice of large masses of mankind, and approved by the sober judgment of the educated physician, there lies a truth which science has yet scarcely appreciated. The operation of cold described in the first quoted passage is evidently chiefly upon the solar plexus. This great nervous centre is as it were smitten with an influence half paralysing, half irritating, which appears to be the effect of cold acting on the contiguous cutaneous surface. This is surely a very remarkable circumstance, and but partially explicable by our present knowledge of the laws of nervous actions. How comes it to pass that the action of cold on the cutaneous extremities of some intercostal nerves should fall so peculiarly on a remote sympathetic centre, and this too situated so peculiarly *en face* of the part primarily affected? Why should not some other centre be affected? The phenomenon, however, is not an isolated one. The arrest of epistaxis by the application of cold to the back, of the catamenia by cold and wet to the feet, and of pulmonary hæmorrhage by ice to the spine and cardiac region, prove that an impression may be transmitted from cutaneous nerves to the vaso-motor of a remote internal part. The interesting fact lately ascertained by Brown-Séquard and Tholozan, is of the same kind. They find that immersion of one hand or foot in very cold water lowers notably the temperature of the corresponding part, and of this only. I have observed a very marked state of goose-skin of the anterior part of the trunk produced by the sudden application of cold water to the back: the skin at the upper semi-circumference of the nipples was rendered quite pale.

In all these instances, we have evidence of the action of cold through incident nerves upon various nervous centres, manifested in certain efferent nerves. It is, therefore, not inconceivable that, in certain cases, the effect may be more specially manifested in the centre itself. This seems certainly to be the case in the sudden deaths that have been occasioned by drinking cold water when the frame was exhausted. The sedative action of the cold upon the gastric nerves is communicated to the solar and cardiac plexus, and through the latter paralyses

the motion of the heart. To proceed. A man travelling on the outside of a coach is exposed to a cold wind blowing in his face, and in consequence becomes amaurotic to a notable extent. He is cured, not by depletion or mercury, but by stimulation of the skin of the face, forehead, temples. (Graves, *Clin. Med.*, 1st edit., p. 398.) The not unfrequent occurrence of paralysis of the portio dura from exposure to cold is, I am aware, often attributed to rheumatic inflammation causing effusion around the nerve in the Fallopian canal; but, besides that there seems little or no evidence to prove this from *post mortem* examination, it is very unlikely to hold good as the true explanation of all cases, seeing that in those common affections, viz., facial rheumatism and tympanic inflammation, paralysis of the portio dura is rarely observed. Romberg quotes J. Frank to the effect that seven of his patients were *suddenly* attacked with this paralytic affection from getting up in the morning and putting their heads out of window, and drawing back because they found it very cold. The supervention of the paralysis in these cases was surely too quick to be ascribed to inflammation and exudation. Dr. Graves records a case, p. 415, in which paraplegia came on in a man aged 32, as the result of exposure to cold and wet. Both motion and sensation were lost, or nearly so. The hands, about three weeks afterwards, were similarly affected, but to a less extent. He remarks: "To what can we attribute these symptoms, except to the influence of cold acting on the nervous filaments of the cutaneous surface of the limbs, extending its morbid impression to the spine, and thence reacting on the nerves so as to produce impairment of the power of motion and diminished sensation? The man certainly had no symptom of cerebral or spinal disease, nor was there anything connected with the state of the nervous centres which would lead to the supposition that the paraplegia was the result of an irritation originally affecting the brain or spinal cord." I have recently observed a case under Dr. Sibson's care, in St. Mary's Hospital, in which there had come on gradually considerable impairment of motion and sensation in the lower and upper limbs, with failure of masticating power. The symptoms dated from exposure to wet, he having stood on wet grass a whole morning, and the affection having commenced the next day. After about four months, he died in a kind of faint. The autopsy was very carefully made, but no morbid change was found in the brain, except some slight congestion, and a little serum in the lateral ventricles. The part of the spinal cord corresponding to the lower dorsal and upper lumbar regions appeared to be firmer than usual, whilst the upper part was much softer than this; but sections of both these portions revealed nothing unnatural in appearance, or worthy of remark. Careful microscopic examination of the spinal cord and pons Varolii detected nothing abnormal; there were no glomeruli, and no granular exudation on the vessels.

The following case is given by Dr. Copland, art. "Paralysis", p. 20. A gentleman, who had resided many years in an intertropical country, on his voyage across the Atlantic in the winter season, "was seized with general palsy of the powers of voluntary motion immediately after prolonged exposure to cold and wet. The functions of the brain were unaffected; and neither pain nor uneasiness was felt in the neck, or in any part of the spinal column, under any circumstances of position, flexure, rotation, or pressure. No evidence of inflammatory action, or of congestion in the spine, could be detected. Cutaneous transpiration was suppressed, and the bowels were costive and torpid; but he retained the sensibility of the surface, and command over the sphincters. He was treated at first upon the supposition of either serous effusion or vascular congestion having taken place in the spinal canal, but without receiving any benefit. He ultimately, however, quite recovered, by having a frequent recourse to warm baths containing stimulating substances."

To my own mind, the above mentioned cases render the conclusion legitimate, that cold operating on the cutaneous surface may so affect one or more nervous centres through incident nerves, that they are more or less entirely disabled from discharging their function. The centre belonging to a motor nerve, a sensory, or a special nerve, may be affected in this way. What is the exact nature of the change effected, we do not know; but it certainly seems not to involve any irremediable lesion of the structural elements. For all practical purposes, we had better think and speak of the change as a dynamic one—a simple loss of power—which we find to be restored by influences of an opposite kind to those which depressed it. In the case first cited, of the action of cold upon the solar plexus, the effect is partly pain, partly paralysis—just such a combination as is common in various neuralgiæ, where the affected part is numb and painful, to which Romberg applies the term anæsthesia dolorosa. The condition of the centre and of the nerves has much to do in determining the result of the impression of cold. If both are healthy, the centre will reflect the impression as a stimulus to vaso-motor nerves. If the centre is feeble, the nerves too sensitive, or the impression excessive, the dynamic organ may be gravely disordered, paralysed, or irritated; and this state may spread and extend to other associated or combined centres. It is very probable that this state of paralysis, or paralysis and irritation, is really an inhibitory phenomenon, the cold acting in the same way as the galvanism in the experiment quoted lower down. The same explanation will, I think, apply to the cases recorded by Stanley and Spencer Wells, of the occurrence of paralysis in connexion with inflamed kidneys; and to those mentioned by Graves, of the same consequence, after gastro-enteritis. The morbid impressions conveyed by ganglionic nerves to the cord, set up in the grey matter a state incompatible with its functional action. It is a very important fact, that if this state continue unremoved for some length of time, it is very apt to become permanent, or at least to yield very slowly to remedies. I am, of course, aware of the view maintained by Dr. Gull, that, in these cases, there exists inflammation and softening of the cord, which is not discoverable without microscopic examination; but I greatly doubt the possibility of admitting this view as expressing what invariably happens. Moreover, it is quite possible that a kind of degeneration might after a time take place in the part of the cord which at first was only functionally paralysed. Dr. Gull has recently published an interesting case of acute paraplegia, proving fatal in about three weeks from cystitis and peritonitis, in which the most careful microscopy detected nothing abnormal in the cord. (*Guy's Hospital Reports*, 1858.) Among the cases cited by Dr. Graves, in his lecture on *Paraplegia*, is a very interesting one which had been under Dr. Hutton's care. In this man's case, an almost sudden amendment took place in his paraplegia (which came on soon after prolonged exposure to cold and wet) on the dilatation of an urethral stricture by a bougie. Warm baths, and friction to his limbs, completed the cure. The rapid improvement in this case seems to me better explained on the view that the paralysis was of inhibitory origin, than on any other. The close stricture was a source of irritation to the spinal cord; and, on diminishing this, the grey matter of the centre resumed its healthy play. The same view will apply, I think, to the two cases related by Sir B. Brodie, pp. 12-13 of his work *On Local Nervous Affections*. A gentleman, lamed by pain in one instep, was cured in a quarter of an hour by passing a bougie for a stricture. A lady was cured of a similar pain by successful treatment of internal hæmorrhoids. These cases were instances of the irradiation of sensations, or at least of centripetal impressions; they are more familiar than those in which paralysis is the result, but the mechanism of both is the same. Some peculiar condition of the nervous centre determines the production of paralysis instead of pain. Perhaps, however, the neuralgic state in a sensory, and the paralytic in a motor nerve, may be closely allied, the result differing according to the different endowment. If neuralgia in the anæmic is "the prayer of the nerve for healthy blood", this surely implies a functional debility, which in a motor nerve would be paralysis or enfeeblement. The same idea is also hinted to us by the occurrence of anæsthesia dolorosa.

Now, to apply the above views to the production of internal inflammations, if it be admitted that the impression of cold conveyed to a nervous centre may there occasion such change as eventuates in the paralysis of musculo-motor nerves, it seems reasonable to conclude that the same impression acting on a sympathetic centre may cause paralysis of vaso-motor nerves. This, as already described, sets up active hyperæmia and increased local heat and tissue-change, which, in states of predisposition, readily passes into actual inflammation. It does not form an objection to the above theory of internal inflammations being produced by external impressions, to say that the effect is of much longer duration than the exciting cause. Instances can easily be adduced in which irritation of brief duration, causing no actual local lesion, has produced abiding disorder at a distance. Duchenne relates how, in Faradising a case of local paralysis of sensation with a powerful current, he once incautiously applied the current to the healthy muscles. The effect was, that sharp pains came on in the excited part, spread to the neck and head, and continued many days. Afterwards, the patient had cerebral symptoms, requiring the use of

derivatives. Such accidents frequently happened to him before experience had taught him to be wary of exciting sensitive parts too strongly.

Whether or not the above explanation be correct, as to the mode in which inflammation is set up in a remote part, as the consequence of a morbid impression upon the external or internal surface, there is no question that inflammations do originate in this way. Brown-Séquard relates that, "in animals in which the spinal cord has been divided at the level of the third or fourth lumbar vertebra, so that the posterior limbs cannot give any pain, and that, also, no irritation can be propagated from them to the viscera of the head, the chest, and most of those of the abdomen," no marked alterations were seen "similar to those which are so often observed in man and animals accidentally burnt, except in the bladder and rectum, and neighbouring organs. On the contrary, when the section of the spinal cord was made as high as the third dorsal vertebra, I have seen all the abdominal viscera in a state of congestion, very much resembling inflammation in many parts, with serous infiltrations and ecchymoses, two days after one of the legs had been burnt by boiling water. . . . In two cases, on animals on which the trunks of the sciatic and crural nerves in one limb had been divided as high as possible, I have not found a state of marked congestion in any viscus three days after I had carbonised this limb from the toes up to the middle of the thigh."

Mr. Paget cites the case of a testicle becoming inflamed to the degree of having lymph and pus deposited in its structure, as the consequence of the irritation of a fragment of calculus impacted in a healthy urethra. He sees no other explanation that can be given, except that the exercise of the nervous force in the testicle was disturbed through the medium of the morbidly affected nerves in the urethra. Dr. Graves relates a case in which a chicken-bone lodged in the œsophagus for about an hour, and produced much irritation and inflammation. About the third day ensuing, the patient got a violent rigor, "which terminated in a profuse perspiration, and ushered in a well marked inflammation of the neck of the bladder." Dr. Graves believes this to have been an instance of disease being propagated in a reflex manner to other and more distant parts. The so-called sympathetic ophthalmia, and the experience of Mr. Paget as to slight conjunctivitis of the left eye being excited by microscoping long with the other, are again instances of the same kind. So is the cure of ophthalmia as the result of the extraction of a carious tooth, recorded by Dr. Campbell.

In all cases of this kind, it is manifest that the nutrition of the secondarily inflamed part must be in a weakened state beforehand, so that its equilibrium is disturbed more readily than that of other parts: it is, in fact, predisposed. This is one element in the process; another is the relation of its nerves to those incident from the seat of irritation.

9. The views above offered are, I think, applicable to many cases of ordinary inflammatory disease, but by no means to all. In particular, I conceive the influenzal affections belong to the class which acknowledges a poisonous agent diffused through the circulation. The rheumatic, on the other hand, I am very much inclined to refer, at least in part, to the cold-excited class. How far the local irritant action of cold—as, *e.g.*, on the bronchial tubes—may operate as a cause of inflammation, seems to me doubtful. If it were a potent or frequent one, the intense cold of the Arctic regions would surely produce more marked effects than the milder cold of temperate climes. The previous state (the predisposing) is probably in all cases of prime importance in determining the result of impressions of cold, not acting as local irritants. Thus, in persons subjected to tropical heats, a chill produces effects which would not occur in those who had undergone no such debilitating influences. Persons in our own country, who are much exposed to heat, as bakers, are peculiarly liable to "take cold". The nervous centres are rendered more impressionable and mobile by the high temperature, and so more sensitive to cold.

10. In the above, mention has chiefly been made of the nerves and the tissues as factors in the process of inflammation; but there is reason to regard the blood as greatly, if not equally, concerned, In the case of such disease as the exanthemata, it is the vehicle of the original, as well as the source of the multiplied virus, which acts as an irritant to produce the various inflammations. But, further, the observations of M. Vanzetti (*Brit. and For. Med. Review*, July 1859), as to the results of interrupting the flow of blood through the main artery of an inflamed limb, go to show that, when the tissues are simply inflamed, the presence of moving blood acts upon them as an irritant, maintaining and increasing that morbid condition; and that the withdrawal of this cause of irritation for a time allows the morbid state to subside, after which the blood-flow may again be restored without reproducing the inflammation. These observations go far to justify venesection, employed as a means of diminishing the stress and force of the circulation.

[*To be continued.*]

CONTRIBUTIONS TO CLINICAL SURGERY.

By Oliver Pemberton, Esq., Surgeon to the General Hospital, and Lecturer on Surgical Pathology at Sydenham College, Birmingham.

VI.—Excision of the Knee.

The operation of excision of the knee in preference to amputation of the thigh, has now been resorted to in so many instances, in this the second epoch of its trial, that we might fairly conclude that its history, its complications, and its shortcomings had been told; that the cases in which it should be selected were recognised; that it was an operation in which the public possessed confidence as well as the profession; and that private individuals had experienced its benefits as well as hospital patients; in a word, that it was established in reputation as strongly as excision of the elbow, or as amputation at the ankle-joint. But, it is not so. We have yet to learn very much in connection with this operation before we can associate it with these and other well tried procedures of surgery.

The mere absence of excessive fatality will not be sufficient to establish its position. No surgeon, at all acquainted with the amount of shock, of hæmorrhage, and the other attendant circumstances of excision of the knee, will contend for one moment that the same amount of danger to life in general follows its performance, as does amputation of the thigh.

The great question is the utility of the limb preserved. The mechanic and the rustic have hitherto been the subjects to illustrate its desirability. We want to know how far they can make use of their limbs in their respective callings.

The time has gone by for us to look with deep interest on a rescued limb merely as such, in consequence of excision of the knee. We must now learn how far the remnant that has escaped will enable its possessor to labour for his living with the same facility as he would have done with a wooden substitute. A sufficient time has now elapsed for the rendering a true account on this important point, and both the public and the profession must anxiously expect to be told of the wearing powers possessed by limbs that underwent the operation in the the earlier portions of the last nine years.

Where the subjects submitted to operation had not attained full development of limb, the possession of this knowledge becomes of paramount importance, inasmuch as on the evidences afforded by such cases, more especially in regard to the question of subsequent parity of growth, will depend the establishment or the total rejection of the proceeding in similar instances for the future. With this view strongly before me, I shall submit to the profession what I may term "the further history of an excised knee-joint in the ungrown subject," comprising a period of nearly six years, and I shall add to this my experience of certain complications which may arise in connection with the operation generally, by a reference to the particulars of typical cases.

Case I. E. F., aged 12, a pale, strumous looking boy, of much intelligence, was admitted under my care in the General Hospital, Birmingham, December 20th, 1853, suffering from disease of the left knee, of fourteen months' duration. The following was the state of the joint. The leg of the affected limb formed a right angle with the thigh, from which position it could only be slightly altered by the exercise of great force, occasioning acute pain. The circumference of the joint was larger by three inches and a half than that of the opposite one. The integuments were shiny and painful. The apertures of four sinuses were apparent; and three of these communicated with carious bone. These openings were situated as follows: one over the external condyle; one over the internal condyle; one over the anterior surface of the femur; and a superficial one over the head of the fibula. His sufferings were very

great, especially at night, from the constant gnawing pain which he experienced. Under the influence of rest and good diet, the knee somewhat improved; in a month's time, however, hectic and diarrhœa manifested themselves, so as to necessitate an operation.

In consultation, my colleagues having agreed with me in the propriety of amputation, I was left to select the alternative of excision of the joint, if I thought fit. Accordingly, upon the 8th of February, 1854, the patient being under chloroform, I proceeded to extirpate the joint.

The mode in which this was accomplished in this, the first instance in which I had attempted to excise the knee-joint, is that which I have without variation adopted in subsequent instances, with the exception that in some few cases I have removed the sawn articular extremities separately, with the view of testing the comparative advantage of such a proceeding over the method which I have advocated, after Mulder* of removing them in their connected state.

Under chloroform, an incision was carried from a little above the outer to a little above the inner condyle, across the front of the joint, below the patella, dividing its ligament of insertion down to the spine of the tibia. The flap thus formed was turned back; and the cavity of the joint was fairly exposed. The disorganised soft parts having been cleared away from over the femur, it was sawn through above the condyles, without the aid of a spatula, or the introduction of a knife: the same process was next applied to the head of the tibia; and the articular extremities were then removed in their connected state, by a cautious dissection of the soft parts beneath, commencing from above downwards. The hæmorrhage was inconsiderable; no ligature was required. The amount of bone removed measured rather more than three inches and a half. About two inches and a half belonged to the femur; and about an inch to the tibia. The patella was left, its under surface being scraped. The head of the fibula was not interfered with.

The operation being finished, the leg was readily brought into a line with the thigh. The flap containing the patella was simply laid, in as accurate a state of apposition as possible, over the parts beneath, without the aid of sutures, and was covered with water dressing. The entire limb was then adjusted on a straight splint, reaching from the buttock to the ankle, furnished with a perinæal band, with a foot support, and with side pieces to the thigh and leg; the knee being left perfectly free on the sides and above, for the application and renewal of dressings.

In subsequent instances the swing cradle has been made use of for the purpose of suspending the entire limb, with its splint and dressings, and with the most satisfactory result, as the tedium resulting from long confinement in one position was greatly relieved by this most admirable contrivance.

Examination of the Diseased Parts. The synovial membrane was everywhere affected by disease. It presented a pulpy, thickened condition, and was of a brownish tint, and covered in places by bloody discolorations. The cartilage covering the tibial surface of the outer condyle was destroyed, as was also the corresponding surface of the semilunar cartilage of the tibia. The entire thickness of cartilage on the inner condyle and tibia was not altogether destroyed, but was in process of ulceration. The extremity of the femur above the condyles was blackened, and denuded of periosteum. The bone was soft and carious. Fresh osseous material had been thrown out behind the condyle and on the head of the tibia. The medullary canal of the bone did not present an unhealthy appearance.

No shock followed the operation; and but a single restless night marked the presence of any constitutional disturbance. The warmth of the limb, below the seat of operation, never varied. The patient had scarcely any pain, and could in the course of a fortnight exercise complete command over the muscles of the foot and leg.

Three months afterwards, the following note was made.

The healing of the wound had been retarded by the thickened character of the integuments. The parts in the situation of the joint were becoming firmer and more consolidated. The boy possessed perfect control over the movements of the foot, and turned it, with the entire limb, either inwards or outwards. The splint was discontinued, and the wound was firmly strapped and rolled.

Four months after the operation, the wound remained open slightly at the sides. A gutta percha splint was applied behind the joint; and the boy was directed to be out of doors on crutches. An accurate measuremeut was made of the two limbs, when it was found that the difference between them exactly corresponded to the amount of bone removed—namely, three inches and a half.

The patient remained in the hospital until October; more for the purpose of observation, than from any necessity. When discharged, eight months subsequently to the operation, the wound had entirely healed. One of the sinuses, existing previously to the operation, over the patella, still discharged. He could walk with the aid of a stick and a high-heeled shoe; the knee being supported by a leather case.

The union between the bones was altogether of a ligamentous or fibrous character, and admitted of free movement in any direction.

After the lapse of nearly six years, I place on record the condition of this patient's limb, and verify its description by a reference to the photograph from which the woodcut that accompanies these observations is taken.

October 1859. E. F. came to my house. He had grown in height, and had thickened considerably in his figure, but was somewhat diminutive for his age (18). The lower limbs presented a wonderful contrast in appearance. The one was strong, with the muscles, bones, and joints, well defined; the other, feeble and blighted. The sound limb, from the anterior superior spinous process of the ilium to the outer malleolus, measured thirty-four inches; the one subjected to operation, twenty-five! Thus showing a difference of nine inches: or a

* "Ossium fines separatim auferre, necessarium non duxit cl. Præceptor, uti fecerit exc. Park. Nullum inde oriebatur incommodum, et optime fines ossium exstirpari poterant. Hisce sublatis nusquam in parte vulneris profundiore detegebatur arteria poplitea; parum igitur durante ipsâ operatione metus aderat, ne illa læderetur." (Wachter, *Dissertatio Chirurgica de Articulis Exstirpandis*, p. 117.)

deficiency in growth as compared with the other of rather more than five inches since the operation. In the middle of the thigh, in the lower third, and round the calf of the leg, the measurements were sixteen, twelve, and twelve as opposed to thirteen, ten, and nine and a half. The foot of the limb operated on appeared to have expanded most, but even this was an inch and a half shorter than its fellow. The femur, the tibia, and the fibula of this limb were not larger than the same bones in a child of ten or twelve.

About the excised joint, the parts were sound, and free from pain on manipulation, a very moveable ligamentous or fibrous medium connecting the articular extremities. Notwithstanding the shortness and the flail-like joint, it was astonishing to see the power he possessed of extending the leg, and of bearing the entire weight of the body on it in walking, unaided by support of any kind; and it was quite clear that the disparity in length alone prevented him from realizing all the advantages that he might under other circumstances have obtained from the operation. With all these drawbacks, he works hard as a boat-builder, the limb being aided by a cork sole of some six or seven inches in height, and by a leather case at the knee.

The limb cannot, however, be deemed otherwise than an incumbrance, and with the best appliances to remedy the want of length, proving, after all, little better than a sad deformity.

In 1855, an authority on excision of the knee thus expresses his opinions on this question of subsequent growth.

"Another objection has been brought forward against the operation of excision, and which demands grave consideration. It has been asserted, that where the operation is performed in early life, the growth of the limb has been checked, and, consequently, that the lower extremities do not keep pace with each other, and hence one becomes so disproportioned to the other as to be ultimately useless." (Butcher, *On Excision of the Knee-Joint*, First Memoir, p. 46).

In 1857, the same writer reiterates these sentiments. "In my former essay I proved, by several instances, that the growth of the limb was not checked by excision of the joint in childhood; and am happy now again to confirm this most important fact." (2nd Memoir, p. 60.)

Speaking of excision of the knee, Mr. Syme writes: "I tried the operation nearly twenty years ago, on a boy, who perfectly recovered from it, and seemed at first to possess a limb little inferior to its fellow, except in so far as it was stiff at the knee. But, in the course of time, it was found that the growth of the two limbs was not equal, and that the one which had been the subject of operation gradually diminished in respective length, until it wanted several inches of reaching the ground when the patient stood erect." (*Pathology and Practice of Surgery*, p. 225: 1848.)

I have quoted the preceding remarks word for word, as they commence and end, in the eighteenth article of Mr. Syme's work, in preference to alluding to his mere opinion on the matter; for the same paragraph, in all its identity, has been frequently referred to and cavilled at during the past nine years.

Unhappily, in the case I have narrated, I fear that another "existing proof" of the fact *is* added to the only one that Mr. Butcher (First Memoir, page 46) could discover, when he wrote his first and second memoirs on excision of the knee, that the growth of the limb is at least sometimes checked when the operation is performed in early life. This most undaunted surgeon has, I fear, been led to adopt those conclusions on the question which his wishes and anticipations too clearly held in view. He does not write from his own experience, but strengthens the position he assumes by the communicated observations, amongst others, of Dr. Keith of Aberdeen, Mr. Page of Carlisle, and Mr. Jones of Jersey.

Dr. Keith's case was a boy, aged 9, from whose knee two inches of bone in the whole, about equal portions from the femur and tibia, were removed; three years afterwards, the limb was reported as "plump, and growing as fast as the sound limb." There was firm bony anchylosis.

Mr. Page's patient was a young lad, aged 17. Two inches and a half of the femur and tibia were removed. There was firm bony anchylosis. Reporting on his condition four years afterwards, he writes: "the growth of the stiff limb has quite kept pace with that of its fellow."

Mr. Jones's observations refer to the cases of three boys, aged respectively 7, 11, and 9. In the first instance, two inches and a quarter of bone were removed. There was bony anchylosis. In the second, rather more than four inches of the femur and tibia were removed. There was bony anchylosis. In the third, the exact measurement of bone removed is not mentioned; but there was bony anchylosis. This patient died at the end of twelve months; and Mr. Jones writes: "There cannot be a doubt that in this instance the limb, from which the joint was excised, kept pace with the other in every respect." Whilst in regard to the first mentioned cases no disparity of growth is hinted at.

From Dr. Keith, the distinguished surgeon of Aberdeen, I have received the following most lucid report of the present state of the boy's limb, on whom he operated nearly six years since. Dr. Keith's letter is dated October 12th, 1859; and he thus writes to me:—

"Dear Sir,—I have pleasure in replying to your favour of the 7th current, but have not the additional pleasure of reporting so favourably of John Hay's limb, as I seem to have felt warranted in doing three years ago.

"Be the cause what it may—and I shall be delighted to have your opinion on the subject—I, and I presume every one who has had experience in resection of the knee, feel convinced that growth to the length is all but arrested in the lower limb after every such operation.

"I delayed my answer until I should have opportunity to see and to measure John Hay's lower extremities; this I accomplished yesterday, and annex the result.

"He is now a stout healthy boy, in his fifteenth year; his left or sound lower limb long and well developed. His right limb is really plump to look at, but seems a mere appendage to his body, when compared with the other limb: the right limb being now *seven inches* shorter than the left limb, from the anterior superior spinous process of the ilium to the heel.

"At the thick of the thigh the left measures 17 inches round; the right, 16. Around the knee and patella: left, 12½ inches; right, 12. Around the calf of the leg: left, 11½ inches; right, 10½.

"In length, the left limb is 17 inches from the anterior superior spinous process of the ilium to the centre of the patella, and 17 inches from the same spot to the sole of the foot, in whole 34 inches; while the right was only 12½ to 14½, total, 27 inches.

"Yet, wearing a boot propped up by two steel rods seven inches long, he walks and runs with great ease and energy; and when I yesterday asked him, If he now wished the limb had been removed, he at once exclaimed: 'Oh, no! my leg is worth a thousand wooden ones; it is my own leg, sir, and I feel it to be so.' I daresay the poor fellow is right. The arrest of growth to the length is a mystery. Let me see that you solve it.

"To account for my statement made to Mr. Butcher three years ago, it is only necessary to state that exercise had developed the muscles so, that the limb was plump; he wore the same high-heeled boots that I had at first provided for him, so that no increase of disproportion in length had at that date taken place between the two limbs; but now my guess is, that the dwarfish little fellow had been standing still, and neither limb growing in length, it was only when he began to shoot out in earnest that the difference became apparent, and new boots with higher and higher props became the order of the day.

"Hay's right limb has an outward curve at the knee now, though anchylosis is perfect, and he thinks it is slowly increasing. That tendency from the hour of the operation has been often noted. How is it to be obviated?

"1. I think well of cutting the tendons forming the inner hamstring.

"2. Of slicing rather more off the inner than the outer condyle of the femur.

"3. Using a splinted knee-cap for life.

"The patella was spared in this case, and has strong union to both femur and tibia; and yet with all this the callus yields after five years."

The foregoing narrative of Dr. Keith will be attentively perused by practical surgeons. In two respects, his case possessed an advantage over mine. There was anchylosis; and but half the quantity of bone was removed. Notwithstanding, at the end of nearly six years, the deficiency of growth is measured by five inches—the same amount that was recorded in my case, and extending over the same period of observation, within three months.

The circumstances which led Dr. Keith to state, in the first instance, that the limb was "growing as fast as the sound limb", are, in my judgment, sufficiently explained by the presumption that neither limb had then grown, or, if they had

done so, it was only in a very limited degree. I had the same impression some two or three years after I had operated on E. F.; but I found subsequently that the real stride in development had not then commenced; and that, when it did, the limb subjected to operation did not partake in its advance.

The lateral yielding of the callus is not, in my experience, of frequent occurrence, where firm bony union has taken place. It may happen in young subjects, and, if so, forms another drawback to the proceeding being adopted in early years; but it certainly does not occur in adults. I should, however, always use in the ungrown limb a splinted knee-cap, as Dr. Keith suggests, to guard against the possibility of the event.

The next case, which was selected to illustrate the parity of growth, was under the care of Mr. Page. But the patient was seventeen years of age; and thus being past puberty, his condition cannot fairly be adduced in support of the theory.

Then we have Mr. Jones's three boys. The third boy, aged 9, died twelve months after the proceeding. His limb was found to have "kept pace with the other in every respect"—a statement, after what we have now ascertained, that cannot amount to any determination of the question at issue. The first and second boys, however, in whom large quantities of bone were removed, should now have their limbs reported on, as, from the length of time that has elapsed since the operations (eight and seven years), the evidence which their subsequent history could afford would be most important.

Being anxious to know about these cases, I wrote to Mr. Jones concerning them; but my letter arrived at Jersey at the time of the calamitous fire in the General Hospital, or I doubt not that I should have received the information I sought. As it is, I trust that the profession, through some other channel, will ere long be in possession of all the facts concerning their present state, which this most able surgeon can afford.

On what, let us inquire, when the operation of excision of the knee is performed in early life, and the subsequent growth of the limb does not correspond with its fellow—on what does this depend? Mr. Humphry says: "In young persons, care should be taken to make the section through the epiphyses of the tibia and femur; so that a thin layer of the epiphysis, with the cartilaginous medium that unites it with the shaft, is left upon each bone. If this precaution be taken, there is every reason to believe that the limb will keep pace in its growth with the opposite member." (*Med.-Chir. Trans.*, vol. xli., p. 216.) This opinion of so distinguished an authority on the development of the skeleton as Mr. Humphry, is entitled to every consideration, and, at first view, it appears plausible; but it is not borne out by facts.

Mr. Price writes: "Should the epiphyses of the bones be removed entirely, there can exist but slight doubt that arrest of further development will take place." (*Med. Times and Gazette*, April 23rd, 1859.) If this were so, there ought to have been an arrest in the growth of Mr. Jones's first and second instances, in which the bones must have been sawn through beyond their cartilaginous joinings, as well as in the boy operated on by Mr. Page, at whose age (9) an inch from either articular extremity could scarcely fail to go beyond the epiphysis.

On the other hand, Mr. Syme informs me (July 30th, 1859) that the articulating surfaces only were removed in the instance from which he drew the conclusions already cited, the bulging parts of the bones being left.

But, supposing that the bones in the thigh and leg do not grow when deprived of their heads, how are we to explain the want of growth in the case I have narrated, in the foot and the fibula, in the absence of the plea of want of use, inasmuch as the boy has worked his little limb for years with persevering activity?

That the theory of growth being arrested in young subjects by the removal of the heads of bones, is an untenable one, we have other facts in surgical experience to prove. Take, for illustration, amputation in the lower third of the thigh or leg, or at the ankle-joint. I have never found an arrest in the subsequent growth of the bones in my experience, in the first class of cases; and I am not aware of others having met with a different result. The complaint has been, rather, that the bone or bones in the stump become troublesome, and grow too much, so as even to require the removal of some inches at a period of years very distant from the operation. At the ankle-joint, I have especially watched the parity of growth. I had occasion to amputate at this articulation in an infant only twelve months of age, nearly six years since. The malleolar epiphyses were removed. The subsequent growth of the limb has been of the most perfect character—a condition invariably observed in several other instances where I have been called on to perform this operation at tender years.

That the limb may grow in the young subject after excision of the knee, the evidence which has been given me on the subject by my friend Mr. Humphry goes some way to prove, but not, from the age of the patient at this time, quite far enough to establish an accomplished fact, even in his well observed cases; but we must at the same time acknowledge that it may not do so—a conclusion that cannot fail to make us desire a further inquiry into the causes of failure in this respect, ere we determine to recommend the adoption of the operation in children generally.

The late Mr. Mackenzie hazarded the opinion that the want of anchylosis might exercise an influence on the subsequent growth of the limb. (*Monthly Journal of Medical Science*, June 1856.) He based it on Mr. Syme's case, in which the limb allowed a slight degree of flexion and extension; and, considering that my case afforded even greater mobility, the conjecture, but for Dr. Keith's illustration to the contrary, might have been deemed to be not unfounded.

It will be seen, however, that on the two points—the section through the epiphyses, and the union by anchylosis—Mr. Humphry's case is very conclusive in an argument of results. This able surgeon thus writes to me, July 22nd, 1859:—

"The only case I know of, in which sufficient time has elapsed to enable me to derive satisfactory information respecting the growth of the limb after excision of the knee, is that of William Child, related at page 196 of the last volume of the *Medico-Chirurgical Transactions*. The operation was performed in August 1855, when he was twelve years old; and in two months there was firm union between the bones. In consequence of your note, I drove over to examine the lad yesterday, and find that, during the interval of four years, the growth of the limb has proceeded *pari passu* with that of the other limb and of the rest of the body. The bones of the foot are quite as long as those of the other side—the tibia and fibula very nearly; certainly showing no greater difference than is due to the removal of a thin slice of the upper articular surface of the former. The femur is about an inch shorter than the other femur. The difference in this respect between the femur and the tibia is, I suppose, owing to the greater thickness of the slice removed from the condyles of the femur, in order to obtain a flat surface for union with the tibia."

A fair consideration, then, of the foregoing facts, leads us to certain conclusions affecting the operation of excision of the knee in young subjects. These are:—

Firstly. That the proceeding is liable to be attended by a want of corresponding growth in the limb subjected to operation, as compared with its fellow; the result being, that ultimately the member becomes not only useless, but is an incumbrance, as it has failed altogether to grow in proportion to the general expansion of the frame.

Secondly. That whilst we, at present, have no proof that the removal of the epiphyses, or the failure in obtaining anchylosis, exercise any material influence on the subsequent growth of the limb, it nevertheless appears probable that adequate growth is more likely to be attained where care has been taken to remove as small a portion of the articular extremities as possible, and anchylosis has resulted.

Having testified to the truth, so far as my own experience can guide me, on this deeply interesting question, as it affects the operation in early years, I shall now rest satisfied, trusting in the hope that we may yet reach the means whereby even this cause of failure may be removed, as time enables us to know more and more the results that may have been realised by others.

[*To be continued.*]

Fees for Medical Attendance. The association of physicians and *pharmaciens* of the department of the Somme agreed to the following declaration at a recent meeting:—All things necessary for ordinary life have long increased in price, while the fees of physicians have remained the same. On the other hand, in fixing the amount of fees, it is not sufficient only to take into account the number of visits; but account should also be taken of the severity of the disease, of the importance of the operation, of the risks undergone by the medical man, as well as of other circumstances, such as the social position and the pecuniary means of the patients. Therefore: 1. In future, physicians are entitled to a higher remuneration; 2. This remuneration will not be calculated upon the number of visits made, but according to the circumstances pointed out above.

A Course of Lectures
ON
URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY
LIONEL BEALE, M.B., F.R.S.,
PHYSICIAN TO KING'S COLLEGE HOSPITAL; PROFESSOR OF PHYSIOLOGY AND GENERAL AND MORBID ANATOMY IN KING'S COLLEGE, LONDON; ETC.

Lecture IV.

URINE IN DISEASE. *Arrangement of the Subject. Diathesis.* EXCESS OR DEFICIENCY OF WATER AND THE ORGANIC CONSTITUENTS PRESENT IN HEALTH. *Excess of Water: Diabetes Insipidus: Deficiency of Water: Increased Acidity of Urine: Principles of Treatment: Nitric Acid in the Urine: Ammonia: on Detecting Urea in the Blood or Serum: on Detecting Ammonia in the Breath: Urea; Excess of Urea; Deficiency of Urea: Colouring Matter: Excess of Uric Acid and Urates: Principles of Treatment: Extractive Matters: General Remarks on the Increase of the Organic Constituents, with Analyses: Analyses of Urine in Chorea: Analyses of Urine in Skin-Disease.* EXCESS OR DEFICIENCY OF THE INORGANIC CONSTITUENTS PRESENT IN HEALTH. *Chloride of Sodium; its Diminution in Acute Inflammations: Sulphates; Increase in Cases of Chorea, Rheumatic Fever, etc.: Influence of Remedies: Alkaline Phosphates; Increased Secretion of Alkaline Phosphates in Inflammation of the Brain; Analyses; Earthy Phosphates; Increase in the Urine of Cases of Mollities Ossium; Analyses.*

Excess or Deficiency of the Inorganic Constituents.

[*Concluded from page* 942.]

Alkaline Phosphates. Much has already been said upon the quantity and origin of the alkaline phosphate in the urine; and I have brought forward evidence to show that the greater part of the phosphoric acid eliminated is carried into the organism in the food. A certain proportion, however, there can be little doubt, is formed in the body by the oxidation of the phosphorus of albuminous textures (nervous tissue). In diseases generally, the alterations which have been observed in the quantity of phosphate removed in the urine is to be attributed, to some extent, to the altered diet of the patient. It is reasonable to suppose that, in some conditions of the system in which a more than usual disintegration of tissues rich in phosphorus takes place, more phosphoric acid is formed in the organism than in health. This excess should be found in the urine in the form of alkaline phosphate, and the amount ought to correspond to the activity of the changes taking place. By ascertaining the proportion, we should be able to form an estimate of the quantity of phosphorus oxidised, and therefore of the nerve-tissue disintegrated, of which it was a component part. The really difficult part of the inquiry is to ascertain how much of the total proportion of phosphate present is derived from the food, and how much is actually formed in the organism. The sulphuric acid is almost entirely produced in the body; and there is not, therefore, the same difficulty in estimating the amount of sulphur oxidised, as there is in the case of the phosphorus.

Of late, the importance of this subject has been much increased by attempts to advance the experimental results already obtained in favour of the hypothesis, that the amount of phosphate excreted in the urine is to be regarded as an index of the activity of the nervous system. Those who labour to prove that all the changes in the body are the direct result of certain chemical decompositions, have not hesitated to bring forward these results in favour of their theory. It seems by some to have been regarded as a settled point, that the quantity of phosphate in the urine varies according to the amount of nervous tissue disintegrated; and it has been assumed that the quantity of work done by the brain is in direct proportion to the activity of the chemical changes going on in the nervous tissue. This question is obviously a most important one, and much more is involved in it than at first appears. I propose, therefore, to lay before you a few of the facts which have been ascertained; and I think we shall find that, in this matter, speculation has taken the place of reasoning founded upon facts and experimental observations.

Dr. Bence Jones, as is well known, has written several important papers upon this subject. The general conclusions to which he has arrived are the following:—

"In delirium tremens, and in other delirium, a remarkable increase in the amount of sulphates in the urine was frequently observed; and the total phosphates were in the same cases occasionally remarkably diminished.

"In acute inflammatory diseases of the nervous structures, during the most febrile symptoms, an increase was observed in the amount of sulphates in the urine; and the total amount of earthy and alkaline phosphates in these diseases appeared to be increased in the same proportion as the sulphates were increased." (*Phil. Trans.*, 1850, p. 66.)

"In fractures of the skull, the phosphatic salts increase only when any inflammatory action occurs in the brain; and in acute phrenitis, an excessive increase takes place. In delirium tremens, there is a marked deficiency of phosphates, unless they are introduced with the ingesta; an excess is, however, met with in some functional affections of the brain."

These conclusions are founded upon analyses of 1000 grains of urine, in eleven cases of delirium tremens and eight cases of acute inflammatory affections of the nervous centres. From these I select a few of the extremes.

Delirium Tremens and other forms of Delirium.

Case.	Sulphate of baryta per 1000 grains of urine.	Specific gravity.	Total phosphates.
8. Delirium tremens—thirteenth day	13·10	1037·4	9·83
10. Poisoned by laudanum; delirium and excitement—second day	7·83	1026·8	7·53
4. Delirium tremens—tenth day	17·31	1024·74	0·87
11. Delirium with phthisis—fourth night	6·97	1024·2	0·72
Inflammatory diseases of Nervous Structures, with Head Symptoms.			
2. Inflammation of the brain—twelfth day	3·96	1018·7	5·14
Ditto—thirteenth day	11·23	1027·26	11·13
6. Inflammation of lungs, with tubercles and violent head symptoms—fourth day	8·55	1027·85	7·19
Ditto—sixth day	7·81	1026·1	6·43

The quantity of urine passed by the patients in twenty-four hours is not stated, nor is the amount of solid matter in 1000 grains of urine given. It is therefore very difficult from the above data to form an estimate of the total quantity of phosphate removed from the organism in twenty-four hours. Although many of the results, as far as they go, favour the above view, and especially when the numbers are considered with reference to the amount of solid matter estimated from the specific gravity, the increase of the phosphates, in cases of inflammation of nervous structures, cannot, I think, be regarded as an established truth.

I have estimated the quantity of phosphate in urine in various cases of disease. Some time since, I examined the urine of many patients in St. Luke's Hospital, for Dr. Sutherland, with the view of ascertaining the proportion of alkaline phosphate excreted in different cases of mania, dementia, paralysis of the insane, etc. (*Med.-Chir. Trans.*, vol. xxxviii, p. 261.) Forty-two analyses were made, and the following formula was filled up in each case.

Water.....
Solid matter.....
Organic matter.....
Saline matter .....
Phosphate precipitated by chloride of calcium and ammonia.....

Some interesting facts were made out, and the quantity of phosphates relatively to other constituents of the ash differed much from the healthy standard. Some of the results confirmed, as far as they went, Dr. Bence Jones's conclusions; but I do not think we can form a very positive conclusion from these data, seeing that, in some of the cases, the solid matter contained 10 or 12 per cent. of mixed phosphate; while in others only 3 or 4 per cent. was found; and this variation did

not always correspond to a difference in the symptoms. I subjoin a few of the most interesting results from two of the series of cases.

Paralysis of the Insane.

21. From a man, aged 36. First attack. It lasted two months. Complete recovery.

22. From a man, aged 45. First attack, of one month's duration. Not relieved.

23. From a man, aged 42. The specimen was taken on a day when he was very violent and noisy.

24. From the same, about three weeks afterwards, when the excitement had passed off.

Analyses.

	21		22	
Reaction	Acid.		Feebly alkaline.	
Specific gravity	1030		1015	
Water	912·6		959·4	
Solid matter	87·4	100·00	40·6	100·00
Fixed salts	21·42	24·50	13·31	32·7
Phosphate of lime precipitated by chloride of calcium and ammonia	5·18	5·92	1·57	3·86

	23		24	
Reaction	Neutral.		Acid.	
Specific gravity	1008		1016	
Water	988·6		958·2	
Solid matter	11·4	100·00	41·8	100·00
Fixed salts	4·74	41·57	8·45	20·21
Phosphate of lime precipitated by chloride of calcium and ammonia	2·90	25·44	2·86	6·84

It is important to observe that, in 23 and 24, 1000 grains of urine contained almost exactly the same quantity of phosphates, but that the proportion to the other constituents was very different; the solid matter in the first case containing the very large proportion of 25·44 per cent.; in the second, only 6·84 per cent.

Acute Mania, with Paroxysms.

25. From a man, aged 18, with meningitis. The present is the first attack, and has lasted three months. He recovered.

26. From a woman, aged 55. First attack, which has lasted about three months. She recovered.

27. From a man, aged 26. First attack, which has lasted six days. There was much exhaustion and emaciation. Weighs 7 st. 12 lb. Discharged uncured.

28. From a girl, aged 18. Second attack. Weighs only 6 st. 6 lb.

Analyses.

	25		26	
Reaction	Acid.		Feebly acid.	
Specific gravity	1020		1023	
Water	945·8		943·00	
Solid matter	54·2	100·00	57·60	
Fixed salts	12·91	23·81	15·10	26·49
Phosphate of lime precipitated by chloride of calcium and ammonia	6·05	11·16	7·14	12·52

	27		28	
Reaction	Acid.		Acid.	
Specific gravity	1033		1028	
Water	908·00		931·6	
Solid matter	92·00		68·4	
Fixed salts	13·18	14·32	20·33	29·72
Phosphate of lime precipitated by chloride of calcium and ammonia	9·73	10·57	4·49	6·56

It is much to be hoped that such observations will be further carried out by those who have the opportunity. Most valuable results would certainly be obtained, if the urine could be carefully collected for the twenty-four hours.

The conclusions at which Dr. Sutherland arrives, in his paper above referred to, are the following:—

1. A plus quantity of phosphates exists in the urine in the paroxysms of acute mania.

2. A minus quantity exists in the stage of exhaustion in mania, in acute dementia, and in the third stage of paralysis of the insane.

3. The plus and minus quantities of phosphates in the urine correspond with the quantitative analysis of the brain and of the blood; for a plus quantity of phosphorus is found in the brain, and a slight excess of albumen in the blood of maniacal patients; and a minus quantity of phosphorus and albumen are found in the brains of idiots, and a minus quantity of albumen in paralysis of the insane.

4. The plus quantity of phosphates in the urine of cases of acute mania denotes the expenditure of nervous force, and is not a proof of the existence of acute inflammation in this disease.

I have selected the following analyses from my note-book:—

Chronic Inflammation of the Brain.

Analysis 29 shows the proportion of phosphates in the urine of a man, aged 34, who had been suffering from a tumour pressing on the veins of Galen, causing dropsy of the ventricles of the brain. There were many symptoms of chronic inflammation. Specific gravity 1018, acid.

30. Three weeks after the first analysis, acid, clear, pale; specific gravity 1015.

31. After another interval of three weeks, clear, natural colour; specific gravity 1016.

Analyses.

	29		30	31	
Water	962·10		1000·00	956·3	
Solid matter	37·90	100·00		43·70	100·00
Organic matter	27·09	74·12		33·72	77·17
Fixed salts	9·81	25·88		9·98	22·83
Phosphate of lime precipitated by chloride of calcium and ammonia	2·74	7·22	3·53	3·92	8·97

Urine in Epilepsy.

32. From a man suffering from epileptic fits, occurring every five or ten minutes, for seventeen hours. He breathed stertorously the whole time, and no urine could be obtained during this period. Urine was obtained on the next day (June 10th), acid, specific gravity 1024. Contained an abundant deposit of urates.

33. From the same patient, on the 12th; acid, 1024. Contains a good deal of pus.

34. From the same patient, on the 19th; alkaline, 1017.

35. From a very intemperate patient, aged 50, who had epileptic fits every few minutes for thirty hours, followed by exhaustion (twelve hours) and death. There was complete loss of consciousness.

36. From a man, aged 53, suffering from slight general paralysis, with impaired speech (slight), intellect, and memory. Duration of illness, three years. Urine pale, clear; no albumen; feebly acid; specific gravity 1009.

Analyses.

	32		33	
Water	931·2		927·2	
Solid matter	68·80	100·00	72·80	100·00
Organic matter	58·35	86·27	51·01	85·18
Fixed salts	9·45	13·73	10·79	14·82
Phosphate precipitated by chloride of calcium and ammonia	6.96	10·11	3·92	5.38

	34		35	36	
Water	958·8		1000	976·7	
Solid matter	41·20	100·00		23·30	100·00
Organic matter	34·68	84·18		17·46	75·94
Fixed salts	6·52	15·82		5·84	25·06
Phosphate precipitated by chloride of calcium and ammonia	2·15	5·21	8·86	1·79	7.68

The quantity of phosphate in the first analysis is very great, especially when the small proportion of saline matter in the urine is taken into consideration. In Analysis 32, the ash consists of as much as 73·63 per cent. of phosphate; in 33, 36·30 per cent.; and in 34, the proportion is further diminished to 32·93 per cent.

Urine in Delirium Tremens and Puerperal Mania.

37. From a man, aged 36, on the fifth day of a slight attack of delirium tremens. He had had three severe attacks previously. Clear, high coloured; specific gravity 1015. The saline matter contained much sulphate, but not a trace of chloride.

38. From a man, aged 31, with delirium tremens of a fortnight's duration. Acid; specific gravity 1020.

39. From a woman with puerperal mania. Acid; specific gravity 1012.

Analyses.

	37		38	39
Water . .	959·32		1000·00	1000·00
Solid matter . .	40·68	100·00		
Organic matter .				
Fixed salts . .	6·30	15·48		
Phosphate precipitated by chloride of calcium and ammonia . .	2·93	7·20	7·66	3·40

Urine in Health.

The following analyses show the varying quantity of the phosphates in the urine of a healthy man, twenty-three years of age. The large proportion of fixed salts depended upon the presence of much chloride of sodium.

40. Passed at 2½ P.M., immediately after dinner. Clear, natural colour; acid; specific gravity 1015.

41. Passed at 6 P.M. on the same day, after three hours reading. Acid; specific gravity 1011.

42. Passed at 2 P.M., immediately before dinner, on another day. Feebly acid; specific gravity 1022.

43. Passed at 6½ P.M., four hours after dinner. Acid; specific gravity 1026.

Analyses.

	40		41	
Water	963·60		972·4	
Solid matter . . .	36·40	100.00	27·6	100·00
Organic matter . .	14·75	68·00	19·89	72·07
Fixed salts . . .	11·65	32·00	7·71	27·93
Phosphate of lime precipitated by chloride of calcium and ammonia . .	2·62	7·19	1·92	6·95
	42		43	
Water	943.80		936.80	
Solid matter . . .	56.20	100·00	63·20	100·00
Organic matter . .	37·80	67·26	30.38	63·84
Fixed salts . . .	18·40	32·74	22·82	36·16
Phosphate of lime precipitated by chloride of calcium and ammonia . .	2·40	4·27	6·22	9·84

In the above analyses, can any relation be shown to exist between the symptoms of the patient and the proportion of phosphoric acid? In some, there is undoubtedly an indication of such a relation; but in others the proportion of phosphate is as great, although there was no evidence whatever of increased cerebral action or of inflammation. Without discussing the abstract question, I cannot think that the evidence at present obtained is sufficient to enable us to form a general conclusion. The inquiry is more difficult than it at first sight appears to be. Practically, we must determine how much phosphate is derived from the food, and how much from the oxidation of phosphorus. We have then to ascertain the proportion formed in the muscular system, as well as in the nervous structures. Dr. Hammond, who has carried on very many valuable researches upon subjects of this nature, has found that the phosphates in the urine are greatly increased after active exercise.

In any case of disease in which the excretion of an increased quantity of phosphates in the urine is suspected, we should ascertain—

1. The total quantity of phosphoric acid, in combination with alkalies, in the urine passed in the twenty-four hours.

2. The amount taken in the food within the same period of time.

To be more exact, the earthy phosphate in the urine should also be estimated, as well as that which passes off in the fæces.

I have not been able to ascertain that the quantity of phosphate excreted in the urine has ever been compared with the amount taken in the food, in diseases in which we should expect an increased disintegration of nervous tissue. Until experiments have been conducted so as to furnish us with positive data on this point, I do not think we are in a position to determine the question at issue. The results which have as yet been obtained are not sufficiently conclusive, as they fail to show even the total absolute amount of mixed phosphate eliminated from the body in twenty-four hours. One can hardly suppose that, in cases in which the greatest possible amount of disintegration of nervous tissue was occurring, a very great increase in the phosphate would be observed, considering how very much of the total quantity is derived from the food; and of the comparatively small amount *formed* in the organism, a considerable proportion originates in the muscular tissue. Very exact observations upon the in and out-going phosphates have therefore to be made before we can hope to have the fact established conclusively.

I have ventured to occupy much time in the discussion of this question, and have gone more into detail than perhaps its importance, in the opinion of many practical men, demands. Still, when a long train of theories is constructed, the truth of which entirely depends upon the accuracy and correct interpretation of the experimental results from which it starts, it behoves us to examine rigorously into the nature of this foundation; for until the fundamental facts have been firmly established, we cannot allow ourselves to be led by the reasoning, however logical it may be; or receive the conclusions, however closely they may follow on the premises. While, therefore, I do not deny that increased nervous action may be associated with the formation of an increased quantity of phosphoric acid, which is eliminated in the urine, I think that the facts hitherto advanced in favour of this view are by no means conclusive; and I therefore hold that we are not yet in a position to form any theory upon the nature of the changes occurring in health or disease, in cerebral action, regarded from this point of view.

Earthy Phosphates. The proportion of earthy phosphates does not seem to vary much in disease. Dr. Bence Jones has shown that, in cases in which the alkaline phosphates are increased, there is no corresponding increase in the proportion of earthy phosphates. Much of the earthy phosphate eliminated in the urine in health is doubtless derived from the food, but a certain proportion is set free in the disintegration of the tissues, especially the osseous tissues. An increase of earthy phosphate is observed in the urine in some very rare cases of disease, in which the earthy matter of the bones is absorbed (*mollities ossium*). In one acute case of this disease, Dr. Bence Jones (*Phil. Trans.*, 1848) obtained indistinct evidence of the presence of chlorine, and suggests that in future this substance should be searched for, as it may possibly be directly concerned in the removal of the earthy material from bones. This specimen of urine contained a peculiar substance of an albuminous nature. In 1000 grains, there were 1.20 gr. of earthy phosphate; and the solid matter contained 1·18 per cent. The analysis will be given in Lecture v, under *Albumen*. I have had opportunities of making analyses of the urine in two cases of mollities ossium. They were both well marked and fatal cases of the disease, and the specimens of urine were obtained shortly before death. The patients were quite bedridden, and the bones were so soft as to be readily indented by the finger.

44. This specimen of urine, from a woman suffering from mollities ossium, was sent to me by Dr. Chambers. The deposit contained oxalate of lime, with numerous stellate masses and separate crystals of triple phosphate. Reaction, acid; specific gravity, 1014.

45. From a case sent by Dr. Greenhalgh. Morning specimen.

46. Night specimen.

Analyses.

	44		45		46	
Water .	971·9		965·2		960·88	
Solid matter .	28·1	100	34·8	100·00	39·12	100·00
Urea . .	5·0	17·7				
Extractives .	10·22	36·3				
Fixed salts .	12·88	45·81	14·44	41·49	5·25	13·42
Earthy phosphs. precipitated by ammonia .	1·185	4·21	·79	2·27	·4	1·02
Alkaline phosphs. precipitated by sulph. magnesia and ammonia .	1·13	4·21	·86	2·47	1·3	3·32
Triple phosphs. filtered from the urine . .			·058	·16		

The large proportion of earthy phosphate in these analyses is a very interesting fact. In the first, the earthy actually exceeds the alkaline phosphate; and in the second, it is nearly equal to it. In healthy urine, the alkaline phosphate usually amounts to from ten to fifteen times as much as the earthy phosphate. The inorganic salts generally, are in considerable excess.

Excess of Earthy Phosphate, which has been shown so rarely to exist, must be carefully distinguished from the mere deposit of a certain amount in an insoluble form. The earthy phosphates very often form an insoluble deposit in urine. The characters of these salts will be described under *Urinary Deposits*. It is hardly necessary to observe, that the deposit does not depend necessarily upon the excretion of an excessive quantity, but is often due to a change having occurred in some of the constituents which normally hold these salts in solution. A small quantity of deposit of earthy phosphates makes a great show in urine; and it is obvious that a very large proportion might be held in solution in the urine, and thus escape detection, unless an analysis were made. In the case just cited, the greater part of the earthy phosphate was in *solution* in the urine. It is common enough to find the deposit in cases of dyspepsia and overwork, and it is often spoken of as indicating the destruction of nervous matter. In these conditions, the urine often becomes neutral or slightly alkaline, and this causes the precipitation of the phosphate. As before remarked, the quantity of the earthy phosphates is not perceptibly affected by those circumstances which influence the quantity of the alkaline phosphate; and, although an excess of earthy phosphate is of considerable importance, its existence depends upon morbid actions of a different nature. A diet composed of much sugar diminished the earthy phosphate in the urine (Böcker).

Of the principal Points to be ascertained from a Quantitative Analysis of Urine in Disease.

In clinical investigation, the principal points which it is important to ascertain with regard to the characters of the urine are the following:—

Quantity passed in twenty-four hours.
Specific gravity of specimens passed in the morning and evening.
Reaction of specimens in the morning, and about three hours after meals.
Colour; smell; consistence.
Presence or absence of a deposit. If present, its microscopical characters. (Lectures VIII, IX, X.)
Presence of any of the substances to be described in Lecture V—albumen, colouring matter of bile, sugar, etc.

Estimation of the quantity of constituents in 1000 grains of the mixed urine of twenty-four hours. From these data, the quantities passed in twenty-four hours are to be calculated.

	In 1000 grs.	In 24 hrs.
Water	—	—
Solid matter	—	—
Organic matter	—	—
Saline matter	—	—
Urea	—	—
Uric acid	—	—
Free acid	—	—
Extractives, etc.	—	—
Alkaline phosphates, or phosphoric acid	—	—
Earthy phosphates	—	—
Sulphates, or sulphuric acid	—	—
Chloride of sodium, or chlorine	—	—

In particular diseases, it is very desirable to ascertain the quantity of one or two constituents removed in the twenty-four hours; and very much valuable information with regard to the nature of many diseases might be obtained by a number of careful and exact analyses of this kind. It is not necessary to fill up the above scheme in every case. In some, it would be desirable to know the amount of urea and uric acid with precision; in others, the amount of urea and sulphates. In diseases of the nervous system, the exact amount of alkaline phosphates passed in the twenty-four hours should be noted, etc. Before the investigation is commenced, the observer should determine exactly the points he wishes to ascertain, construct a table, and fill up the several columns daily from his analysis-book. Every analysis should be made in precisely the same manner, and careful notes of the case should be recorded daily. If possible, analyses of the urine should be made after the patient is restored to health; so that the quantities of the various constituents eliminated from the body in a state of health and disease may be accurately compared, and the patient should be weighed at intervals while under observation.

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

British Medical Journal.

SATURDAY, NOVEMBER 26th, 1859.

THE PUBLIC HEALTH.

There is something grand, almost epic, in the employment of the Registrar-General of deaths. Throughout the year, he has ever open before him the great book of death, which at stated times he casts up, and tells the nation what progress the great reaper has made among us. Unperplexed with the conflicting reports which paralyse the judgments of those who watch the fatal shears of Atropos from lower heights, he is enabled at every quarterly period to show where the hand of the destroyer has lain heavy upon city or county, where he has passed lightly by, and where the science and attention of man have loosened his hold over all but those who legitimately succumb to his final power. Without such an officer, we should never know how we were fighting the great fight with disease. Public Rumour, with her hundred tongues, would exaggerate our epidemics as she did in the olden time; and the minor causes of death would be passed by, which strike so many, but which leave such slight traces upon the public mind.

Pondering over the great volume of the mortality, the Registrar-General puts his finger on one corner of the map, and shows that, in Bradford, man, using his reason and his philanthropy, has within the last few years driven away the too frequent visits of the destroyer. During the ten years 1841-50, death struck down no less than twenty-six in the thousand. Then man came to the rescue of his fellow; a limit was put to the long hours of toil; some of the processes which tended to enervate the inhabitants were replaced by machine-work which cannot feel; the water and the sewerage were attended to; and, to use the poetical words of the Registrar-General, "through the incessant noises of machinery are often heard, as the day declines, pleasant voices singing the concerted songs of the Bradford minstrels." These influences, moral and physical, now tell their tale in the great book of life and death he reads out to the nation; and, instead of a mortality of twenty-six in the thousand, we are informed that, for the last three years, the death-rate in the town has been only twenty-one in the thousand. Here we see the King of Terrors almost as visibly driven away by the hand of man, as in some of those quaint old woodcuts of Albert Durer.

By the aid of the unerring tests furnished by the mortuary pages, the Registrar-General tells us of changes and fluctuations of the death-rate which even more astonish us. This year the grim visitant has left many of his

ordinary tracks in the great towns, and has strode forth into the country. The balmy air, the open heath, the verdant pasture, and the shady wood-side, have in some unaccountable manner lured him for a moment from his more congenial haunts in squalid courts and fever-stricken alleys. The mortality of the summer quarter in small towns and country parishes is above the average, to the extent of more than one death annually out of every thousand living: whilst the destroyer has stricken two in a thousand less than usual in the great town districts. Possibly the long drought, felt more in some country districts than in towns, followed by fever and diarrhœa, thus led the destroyer into "fresh fields and pastures new." Indeed, we are beginning to learn that the air where roses bloom may be heavy with death to man; and that even the mountain-top, where Hygiea loves to dwell, may be rendered by human neglect and perversity as fatal to life as the cellars of Liverpool or Glasgow.

Striking the balance for the whole of England, the Registrar tells us that the summer quarter just passed shows an excess of deaths over the corresponding quarter of last year, amounting to no fewer than six thousand and seventy-nine persons; but that the rate of mortality is still below the average.

Thus our great mortuary officer, who chronicles what shafts of death have sped, enables the country to make a rough-guess at the general condition of the public health. It seems to us, however, that the grim sums he is perpetually working out, only enable us to approximate to our true sanitary condition. His figures measure the severity of our diseases; they by no means inform us of the thousand sick beds from which death has turned aside. There may be an immense deal of sickness in the country, of which little trace is to be immediately found in the *Quarterly Reports*. To our mind, besides the Registrar of deaths, there should a Registrar of disease; an officer, who should attend to and indelibly fix on paper the records of those numerous evanescent diseases which pass and make no sign. Who knows what might result from an accurate register being kept of the common cold and influenzas that come under treatment?

It will be said, that the machinery for providing such an officer with materials is wanting. As far as private practice is concerned, there would, we admit, be an almost unsurmountable difficulty in collecting the records of recovered cases; but there still remains ample material from which we believe a book of diseases as well as of deaths could be made up. The Poor-law medical officers throughout the country make periodical returns of the cases of the pauper patients under their care, specifying the nature of the diseases; while, in most of the large hospitals, there is a record kept of every case that has been under treatment. Here, then, we already have the statistics of an overwhelming mass of disease, which only wants the touch of some philosophical intellect, like that of Dr. Farr, to cause it to bring forth golden fruit. Who knows what great patterns of disease, which now lie invisible to us, may not be evolved from the aggregation of the million small details which individually show nothing—just as some of the most perfect pictures have been painfully built up from the long buried heaps of tessellated stone found in some old Roman ruin? There should be a national book of life—diseased life—as well as one of death; and that the day will come when such a volume will be opened at stated times for the public inspection, we have no doubt whatever.

THE WEEK.

The martial ardour of our Spanish friends manifests itself in a hundred curious ways, but in no way more singularly than in its medical aspect. For instance, the editors of the *Espana* have agreed to give a box of surgical instruments to the surgeon who shall make the first amputation or arterial ligature on the field of battle, or in the ambulances. How many Spanish legs will be needlessly sacrificed in this race for the splendid prize of a box of surgical instruments, we will not stop to inquire. Rewards are not to be confined altogether to the operators, as we find that the *Espana* promises an orthopædic apparatus to the first soldier that shall undergo an amputation. There is something quite touching in this offer to the warrior. Hitherto, the laurel crown has been thought the fit reward for the soldier who suffers in the defence of his country's honour; but the Goddess of Victory henceforth will content herself with offering the Spanish soldier a wooden leg! Operator, and patient operated upon, being thus promised rewards, we may anticipate a fine burst of amputating at the outset of the campaign against the Moors; and those students who wish to study the surgery of war should not neglect such a favourable field for gaining experience. We do not anticipate, however, that, under such circumstances, they need expect any fine example of conservative surgery among the Spanish military surgeons.

The town has been astounded at the account in the *Times* of the arrival from Sebastopol of a shipload of bones—two hundred and thirty-seven tons of bones! We have heard such marvellous tales respecting the use made of the mortal remains of our heroes at Waterloo, that the public are anxious to know if the commercial spirit is already turning to account the bleaching bones of our Crimean soldiers. The suggestion is so horrible, that it has called forth a correspondence in the *Times*. We are assured by some confident "agent for ships with *similar* cargoes", that every precaution is taken by the authorities here to report where human bones are found during the discharge of the vessels. It is quite clear, therefore, that it is thought all the bones may not be those of horses, oxen, etc. But we may ask, Is not this examination a little too late? Would it not be better to make the examination before the bones are shipped, instead of horrifying the public with the bare possibility of their countrymen's bones being sent over here mixed with equine and bovine remains? We may, moreover, ask if the "authorities", thus placed to adjudicate between human bones and those of animals, are possessed with sufficient osteological science to properly perform their duties? Public feeling will certainly demand that the Government shall order a rigid inquiry into this matter; and, in case of the discovery of human remains, that the traffick should be at once discontinued, and the traffickers, if possible, indicted for thus desecrating the remains of our sacred dead.

The vaccination question, which has occupied so much of the attention of the profession of late, is now beginning to attract

the notice of the public press. Several letters in the *Times* have within the last few days drawn attention to the fact that small-pox is greatly on the increase throughout the country, and that there are signs of a degeneration of vaccine lymph, in consequence of its continued circulation through the human frame. This is a subject so fraught with interest to every class of the community, that we trust the Medical Council will speedily see the necessity of moving in the matter, more effectually than the Board of Health have yet done. Dr. Letheby, in an interesting communication to the *Times*, says:

"In the city of London the mortality from small-pox has risen during the last year from an annual proportion of 18 to 47; and during the last nine months the quarterly returns of death from it have been 4, 11, and 26—showing a very serious increase in the spread of the disease; and I believe that is very general throughout the country. The conclusions from it are, either that the protective power of the vaccine lymph is not so complete as it hitherto has been, or that the effect of it in the individual wears out after a few years, or that the operation of applying it is not properly performed. Since July last I have made especial inquiries into the particulars of 93 cases of the disease which have occurred in the city, and of which 34 were fatal; and the results are, that in 13 of the fatal cases, and 14 of the recoveries, vaccination had not been performed. In seven cases it had been done within a year of the attack, and in several within a month, the statement being that the arm had risen well. In eight cases the operation was not successful, and in many others it had been performed in early life—that is, some years before the attack. These facts would seem to show that vaccination is not protective; but there is great reason for believing that the operation is not always properly performed. It can never be considered successful unless the vesicles (three or four in number) are well developed, and go fully through their time of maturation and decay. The mere presence of a little pain and irritation in the arm, with even a slight formation of a vesicle, is no safegard to the disease.

"At the same time, it is possible that the lymph has degenerated and has become modified by frequent transmission through the human subject; and it might be that an occasional renewal of the vaccine matter from the cow would be advantageous. It is very probable, also, that the *materia morbi* which renders an individual susceptible of small-pox is regenerated in the system after its destruction by the vaccine virus; and therefore it may be necessary, as well as prudent, to protect the system by a second, or even a third vaccination, at intervals of a few years."

The fact of partial failures of this kind occurring throughout the country, has been seized hold of by such persons as Dr. Michell, of Bodmin, to denounce in the House of Commons the greatest medical discovery of the present century, not only as a delusion and a snare, but also a means of introducing the most loathsome diseases, before unknown, into the human frame. Unless the medical profession are willing to allow such statements as these to sink into the credulous mind of the public, it should turn its attention seriously to solve the difficulties which lie in the way of the successful application of Jenner's great discovery.

The somewhat frequent occurrence at Oxford, during late years, of fatal boat accidents on the Cherwell and the Isis, has roused the members of the University to endeavour to solve the problem, how to render a health-giving exercise innocent of the charge of being an occasional minister of death. On November 18th, a meeting, composed of about three hundred members, principally undergraduates, was held in the Radcliffe Library, for the purpose of taking the subject into consideration. Dr. Acland presided, and pointed out that the number of deaths from drowning was much smaller than is generally supposed, there having been only fifteen since 1828; and that the means of preventing fatal accidents lay in learning to swim. The meeting ultimately passed the following resolutions, with others:—

"That whereas the means for learning to swim in Oxford are inconvenient or insufficient, the Hebdomadal Council be requested to take into consideration the construction, and, if necessary, to undertake the management of a proper swimming bath, fit for daily use during the two winter terms, and conveniently placed.

"That the Council be requested also to consider whether they can obtain, and, if necessary, undertake the management of a good open swimming pool in the river, with a proper swimming master in attendance at certain hours of the day during the summer term.

"That the meeting offers the above resolutions to the attention of the Council, not only from the desire to diminish accidents, but from a wish to keep alive the English love of aquatic exercises, and to promote, as far as they can, the healthy as well as useful art of swimming for its own sake."

MEDICAL REGISTRATION.

NOTICE.

The Medical Registrar presents his compliments to the Editor of the British Medical Journal, and would be much obliged if attention could be drawn to an advertisement sent herewith, in order that qualified persons who are still unregistered, those especially who have obtained their qualifications in the course of the present year, may not lose their opportunity of appearing in the *General Register* for 1860.

Medical Registration Office, 32, Soho Square, London, W.,
November 21st, 1859.

Association Intelligence.

MEETING OF COMMITTEE OF COUNCIL.

The Committee will meet at the Queen's Hotel, Birmingham, on Tuesday, December 6th, at 1 o'clock.

The state of the Finances, particularly with reference to the publication of the Journal, will be considered; the Readers of the Addresses at the next Annual Meeting will be appointed; and other business will be transacted.

Philip H. Williams, M.D., *General Secretary.*

Worcester, November 22nd, 1859.

BRANCH MEETINGS TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Bath and Bristol. [General Meeting.]	White Lion, Bristol.	Thurs., Dec. 1st, 6.30 P.M.
Birmingham and Midland Counties. [Ordinary Meeting.]	Hen and Chickens Hotel, Birmingham.	Thursday, Dec. 8th, 6 P.M.
Midland. [Quarterly Meeting.]	Board Room, Infirmary, Derby.	Thurs., Dec. 8th, 3 P.M.

[To prevent delay, Reports of Branch Meetings should be sent direct to the office, 37, Great Queen Street.]

BATH AND BRISTOL BRANCH.

DIPHTHERIA.

At the last Quarterly Meeting of the Bath and Bristol Branch, it was resolved that an inquiry should be set on foot with reference to diphtheria. Dr. William Davies, of Bath, will be obliged by answers to the following queries: the replies being numbered according to the questions.

1. Number of cases, ; age, ; sex, ; and general condition of patients.—2. Condition of throat, especially as regards the presence of false membrane, etc.—3. Mode of treatment; local and general.—4. Number of deaths.—5. Cause of death in fatal cases.—6. *Post mortem* appearances.—7. General remarks.

Reports of Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, NOVEMBER 8TH, 1859.

F. C. SKEY, Esq., F.R.S., President, in the Chair.

THIS was the first meeting of the Session.

ANEURISM OF THE ABDOMINAL AORTA ARRESTED IN ITS PROGRESS. BY S. SOLLY, ESQ., F.R.S.

Mr. SOLLY was sent for, on October 16th, 1855, to see Captain W., aged about 30. He was suffering great agony, which he referred to the epigastric region: it was not much increased by manual pressure, but he could not lie flat on his back without additional suffering. Mr. Solly ordered a dose of croton oil; and, as soon as the bowels had acted freely, a grain of morphia, with three drops of tincture of aconite in water, every three hours. Four years and a half previously, he first suffered from pain in his abdomen, when following the hounds on a young and very unruly horse. When he arrived at home in the evening, this pain continued so acute as to oblige him at once to go to bed. Since that time, he had never been thoroughly well. But he said that he did not really suffer much until the last six months, when, the pains becoming more frequent, he consulted a London surgeon, who ordered him mercury with sarsaparilla, and friction to the back, telling him that he considered his affection spinal. These means seemed of some service; but on a hurried journey to Ireland, all his symptoms returned. The pains extended through the abdomen to the back and chest. He had frequent nausea, and at times vomiting, and almost always pain in the stomach after food, solid or liquid. In a letter, dated October 18th, Dr. Gibney of Cheltenham, under whose care the patient had been, intimated the probability of the case being one of aneurism of the cœliac axis. On October 19th, Mr. Solly met Dr. Watson in consultation. The patient was much relieved by the croton oil, and he had had a good night's rest. On examination, there was found to be a distinct pulsating tumour a little above the umbilicus, at about the bifurcation of the aorta. This pulsation was felt not merely from behind forwards, but laterally also. This fact had also been observed by Dr. Watson on his previous examination; and to both it was the confirming point in the conclusion. On listening carefully, there was heard, both with and without the stethoscope, a distinct *bruit de soufflet*. Neither Dr. Watson nor Mr. Solly had now any doubt that the tumour was an abdominal aneurism. The urine, examined by Mr. W. Tyrrell, was "pale, with a white sediment suspended in a small quantity of mucus, exhibiting under the microscope crystals of oxalate of lime." On October 29th, Mr. Leggatt, of William Street, Lowndes Square, residing within a few doors of Capt. W., was called in, and found him complaining of pain in the back. Three or four days after this date, when the bowels had been well emptied by purgatives, Mr. Leggatt satisfied himself of the existence of an aneurism. On November 7th, it was determined to administer chloroform; and having raised a blister by means of a heated iron spoon on each side of the lumbar vertebræ, opposite the seat of pain, to dress the raw surface with morphia. On November 12th, Dr. Todd confirmed the diagnosis of aneurism. On the 19th, the patient was suffering severely from pain and sickness. He was ordered a minim of creasote and two grains of disulphate of quinine every six hours; and a drachm of tincture of opium to be used in an injection. The next day, pulsation could not be felt in the right iliac artery: in the left iliac and femoral arteries, pulsation was distinct, but feeble. On the 29th, he was improving, and the sickness had been restrained: and he was ordered a mixture of quinine, dilute sulphuric acid, alum, and infusion of roses, in the hope of increasing the coagulum in the sac. As, however, this caused griping, it was discontinued on Dec. 3rd, and the quinine and creasote were resumed twice a day, to which, on January 4th, 1856, a quarter of a grain of sulphate of iron was added. On the 12th, after a consultation with Mr. Tufnell of Dublin, who advised confinement to the recumbent posture, a sofa was procured for him, with a rack movement, that would permit some alleviation of position without exertion. He was ordered to have daily four ounces of meat, eight ounces of bread, three ounces either of fruit or vegetables, and twenty-four ounces of water or tea; but no stimulants. On April 28th, the pulsation was less distinct, but was more diffused, and extended more in the direction of the right groin; the *bruit* was less clear, but could be heard almost as low as Poupart's ligament. His general health was improved; and, after submitting to the starving plan and absolute rest for about nine weeks, he travelled to Dover, and bore the journey well. In Dover, he was under the care of Mr. Sankey and Dr. Barton, and went on well until June 15th, when he was reported as gaining strength, and going out daily. Shortly afterwards, he was persuaded to accompany Lord Y. in his yacht on a cruise to Lymington. Here he walked for about half a mile, which was more than he had ever attempted at Dover, and from that time to the present the pain gradually increased, until, on account of its intensity, Mr. Solly was sent for on July 9th. The treatment which had been adopted in London with perfect success in relieving the pain—viz., chloroform, blistered surface dressed with morphia, and opium injections—had been again tried, but with only temporary relief. On examination, Mr. Solly found that the tumour was smaller, the pulsation much less distinct, and the *bruit* fainter; his radial pulse was stronger, he had gained flesh, his appearance was healthy, and his muscles were firm. Under these circumstances, Mr. Solly advised venesection to six ounces. He bore the bleeding well; no feeling of faintness followed, the pulse became softer, and for a time he was relieved. The blood, on the next morning, exhibited a firm coagulum, slightly cupped and buffed. The pain and sickness had now returned; Mr. Solly accordingly recommended a strong aperient, and a blister on the abdominal surface of the tumour to be dressed with morphia. On Sept. 5th, 1856, Mr. Solly saw his patient for the last time, in passing through London on his way to Cheltenham. There are no notes of his progress for about two years; but it appears that, in the mean time, he consulted several surgeons both in London and Dublin, and a London physician, who told him he had no aneurism. On Jan. 23rd, 1859, Mr. Solly was informed by Dr. Gibney that the patient, in consequence of the idea that he had no aneurism, had recommenced his hunting, driving four-in-hand, etc.; and thus he continued, until he died suddenly, on August 8th last, when under the care of Dr. Hoffmeister, of Cowes, who, with Dr. Cass, made a *post mortem* examination. Dr. Hoffmeister had been attending Captain W. for a week previously, during the whole of which time he had been suffering from very severe pain in the back and abdomen; there was marked abdominal pulsation, with a loud bellows murmur; he was occasionally soothed by opiates and chloroform. On visiting him one day, just after noon, he found him pallid and dying. It appeared that, the bowels having acted, he lay down in bed, and immediately afterwards called out from the agony of the pain, and suddenly became deadly pale and faint. The cause of Capt. W.'s death was, on *post mortem* examination, found to have been the bursting of an aneurism of the abdominal aorta, immediately above its bifurcation, nearly four inches in length and between two and three in breadth, the rupture taking place by a small opening at the back part of the aneurism, a little to the inner side and just above the origin of the left iliac artery. The coats of the aneurism, at the lower part, were plated with ossific deposits, and there were also fibrinous deposits. The cellular tissue behind the viscera was very extensively infiltrated with coagulated blood. The vertebræ were not diseased. Mr. Solly thought that if the patient had pursued the same plans by which the character of the aneurism was so much altered that eminent medical men doubted its existence, he might have lived many years; that the sac might have become firmly consolidated, its cavity obliterated, and the fatal termination averted.

HISTORY OF AN ADDITIONAL CASE OF TUBAL GESTATION. BY ROBERT LEE, M.D., F.R.S.

This case, which occurred in the practice of Mr. Gregory Forbes, was that of a woman, who, having menstruated profusely a month before her death, was seized with pain in the abdomen, on October 8th, followed by complete prostration. She died the following morning. On examination of the body, three pints of blood were found in the cavity of the abdomen, which had escaped from an opening in the left Fallopian tube, where an ovum had been developed. The embryo was not found at the time of the *post mortem*, nor was the amnion or vesicula umbilicalis discovered; and there was no deciduum in the cavity of the uterus. The Fallopian tube and ovarium were alone permitted to be removed; and these were examined, under spirit, by Dr. LEE, who found a deciduous membrane adhering to the inner surface of the tube, and enclosing the villi and membrane of the chorion on all sides. The

hæmorrhage was evidently traceable to a rupture in the decidua and adhering portion of the tube, by which a communication was established between the cells of the villi of the chorion and placenta and the sac of the peritoneum, through which the blood flowed from the cells of the chorion into the abdominal cavity.

A CASE OF DOUBLE CLUB-FOOT (TALIPES VARUS) AND CLUB-HAND IN THE SAME INFANT. BY HOLMES COOTE, ESQ.

The author read the particulars of a case of double club-foot and club-hand in the same infant. He remarked that such an occurrence was very rare, no similar specimen existing in the museum of the Royal Orthopædic Hospital. There were cases on record in which both hands and feet were congenitally *deformed;* but in the present instance, there was only displacement, the component parts of the hands being as perfect as were those of the feet in their abnormal position. He added some remarks upon the difference between deformities caused by arrest of development and displacements or alterations in form from mechanical pressure. He argued that club-foot, in its usual congenital form, was due to pressure during intrauterine life. Some preparations of deformity were exhibited.

MEDICAL SOCIETY OF LONDON.

Monday, November 21st, 1859.

John Hilton, Esq., F.R.S., President, in the Chair.

CLINICAL OBSERVATIONS.

Diphtheria, with Irritation and Paralysis of the Œsophagus. On July 29th, 1859, Dr. Rogers was sent for to see a young man, 24 or 25 years of age, a hosier. The patient was walking about in a state of great anxiety; and complained of sore-throat and difficulty of swallowing. The uvula was relaxed, and there were slight patches of exudation. The pulse was 100, rather feeble and low. In the early part of the week, he had had diarrhœa, which had been arrested by medicine obtained from a druggist, and his bowels had not been moved for three or four days. Dr. Rogers sent him an aperient draught, a mixture of quinine with chlorate of potash, and a gargle. On seeing him at half-past seven next morning, Dr. Rogers learned that he had passed a very restless night. His countenance was expressive of great distress. The pulse was 120. Dr. Rogers was informed that he had made attempts to take some of the medicine, and that he had not taken the aperient draught. As his bowels were still confined, Dr. Rogers gave him this draught: the patient attempted to swallow it, but immediately ejected it forcibly across the room. Mustard poultices were ordered to be applied to the throat. At 11 A.M., his condition was decidedly worse; he raised himself now and then in bed to remove the saliva which accumulated in his mouth. This he often spat out violently, and had during the night nearly filled a chamber-vessel with it. He was in continual motion; his pulse was 140; he had profuse perspiration and intense thirst. The symptoms, Dr. Rogers thought at this time, much resembled those of hydrophobia; but no information could be obtained of any injury likely to produce this disease having been received. Mr. Wade was called in consultation, and pronounced the case to be one of spasm of the œsophagus—the occurrence of which, however, he could not explain otherwise than by an extension of the diphtheria. Ice was now ordered to be given by the mouth, and calomel and morphia powders were prescribed. In the evening, his pulse was 160, and the restlessness continued. Blisters were applied to the throat, and a turpentine enema was given. On July 31st, he was more prostrated; he had swallowed nothing, and was constantly hawking and spitting. The medicines were continued, and beef-tea injections were ordered. On August 1st, the pulse was 160. He lay passive in the bed, except when he raised himself now and then to remove the saliva which accumulated in his mouth. In the afternoon, some beef-tea was introduced by means of the stomach-pump. After this, which was repeated next day, he was somewhat revived, and was taken on August 4th to the Middlesex Hospital, the power of swallowing being then still lost. With the idea that there was some effusion at the origin of the pneumogastric nerve, Dr. Corfe, the resident medical officer, had him cupped at the back of the neck. The administration of beef-tea was continued; in about a fortnight the power of swallowing began to return, and in six weeks the patient left the Hospital perfectly recovered. Dr. Rogers desired to have the opinion of the Fellows of the Society on this case. Dr. Corfe had told him that a similar case, in which the patient had died, had occurred in the Middlesex Hospital in the time of Sir Charles Bell. Dr. Rogers was inclined to think that the irritation, followed by palsy, of the œsophagus, was referrible to the same causes as had induced the diphtheria.

Dr. Mackenzie had reason to believe that the manifestation of diphtheria was not confined to the throat, but that it might produce disease of the mucous membrane in almost any part. It occurred in the rectum, being attended with the evacuation of fibrinous casts, and with great general prostration and nervous depression. In these cases, he had seen induced a condition of great irritability of the bladder, evidently dependent on the state of the rectum; and he believed that the irritability of the œsophagus in Dr. Rogers's case had been induced in a parallel manner.

Mr. Ernest Hart said that there were many cases on record which bore on that of Dr. Rogers. Faucial paralysis, paralysis of the soft palate, and general paralysis of the body, had each of them been frequently noted as sequelæ of diphtheria. Dr. Maingault had recorded, among the *Thèses de Paris*, a very interesting and extended series of cases of faucial, pharyngeal, and general paralysis; and Dr. Duchenne of Boulogne recommended, in such cases, the application of local Faradisation as a means of cure. Mr. Hart had met with such cases, and employed Faradisation successfully. M. Herpin, surgeon to the hospital of Tours, had recorded minutely the progress of paralysis following diphtheria in his own case. Dr. Gull, Dr. Kingsford, Mr. Thompson of Launceston, and others, had recorded cases. An interesting instance of a diphtheric affection, similar to that mentioned by Dr. Mackenzie, was put on record by M. Mahieu: it was a case of vaginal diphtheria, in which the specific character of the disease was proved additionally by its contagious influence on the child.

Dr. Salter asked in what way the inflammation of the rectum alluded to by Dr. Mackenzie differed from ordinary plastic inflammation of the part, such as had been seen long ago, where fibrinous flakes and casts were thrown off.

Dr. Mackenzie replied that in the diphtheritic inflammation the symptoms were acute; in the ordinary form, mentioned by Dr. Salter, they were chronic, and very passive. Sometimes the exudation would go on for weeks without constitutional disturbance or much suffering, and without the production of sympathetic irritation in other organs.

Dr. Camps believed that Dr. Rogers's case was one of reflex action affecting the organs supplied by the pneumogastric nerve.

Dr. Rogers said the view taken by Dr. Mackenzie would probably explain another case which had come under his notice, of a lad, aged 16, who had a diphtheritic patch on the right tonsil. This was detached by means of dilute nitric acid, and a patch of ulceration was left. The patient went on apparently well for some days, when he was suddenly seized with syncope, and was for a time insensible. He had been taking wine daily, but it had been omitted on the day when this occurred; it was now resumed, to the extent of half a pint daily. The ulcer was again touched with nitric acid. At about 11 A.M. he had a similar sudden attack, and died. No autopsy was allowed.

Hæmorrhage from the Bowels as a Sign of Polypus of the Rectum in Children. Mr. Bryant had found a very constant connexion to exist between hæmorrhage from the bowel and polypus of the rectum in children. At least twenty cases, all in children from ten years old and under, had been seen by him during the last two years; and many of them had been treated for piles. In most, the sanguineous discharge was constant, in others occasional; in some, it was connected with the act of defæcation; in others, it occurred independently. Straining was sometimes present; but he had not seen the discharge attended by prolapse. The polypus could be readily detected by digital examination. Mr. Bryant related some illustrative cases; and observed that, in cases of hæmorrhage from the rectum in children, the surgeon should at once examine. The polypus will be found generally one or two inches above the end of the gut, varying from the size of a pea to that of a small nut; and very moveable. The pedicle was always very simple. He had never seen piles in a child, and believed that cases so described were really cases of polypus. In reply to questions, Mr. Bryant said he believed the hæmorrhage to proceed from the polypus itself; this could be seen in cases where the tumour protruded. He had not been able to trace large vessels into the polypi; but that they were vascular, was evident from their colour, which was often nearly that of a black cherry. In the

cases he had related, there had been no dysentery, or other bowel irritation.

Excision of the Hip-Joint. Mr. P. C. Price exhibited a little boy, whose case was referred to at p. 298 of the Journal for April 10th, 1858. The head of the femur and a portion of the acetabulum had been removed, on account of strumous disease. Two years ago, the child was brought to Mr. Price with extensive disease of the joint, with diarrhœa, night-sweats, etc., and altogether in a very hopeless state. He was now able to move about without a crutch, and play with other boys. There was still a sinus remaining. The difference in the length of the two limbs did not seem greater than would unavoidably result from the removal of the head of the bone below the trochanters. He also related a case which had been under the care of Mr. Jones of Jersey, of a servant girl who had strumous disease of the hip-joint. Mr. Jones removed the diseased parts. In three months, the girl was walking about, and had since resumed her duties as a servant. Mr. Price observed that, in his experience, complete dislocation of the head of the femur was very rare in chronic disease of the hip-joint, although often supposed to exist; he had seen but two cases of it.

Obstinate Ulcer from a Bite. Mr. Gay related the case of a young woman who had been under his care with an obstinate ulcer on the back of the hand, which had, for about two years, resisted all treatment. Its edges were defined; the surrounding skin was elevated and hard; and its surface, which was of about the extent of three peas, discharged a thin matter. At last, Mr. Gay cut out the ulcer, and healing took place. The patient had been bitten in the situation of the ulcer by a child a year and a half old, who had at the time an eczematous eruption.

Editor's Letter Box.

PUBLIC VACCINATION.

Letter from Henry Terry, Jun., Esq.

Sir,—An anonymous correspondent, in the Journal of Nov. 12, writing on the above head, complains of the *injustice* of the present arrangement "to more than half the medical men". May I, in reply, ask him to refer to the Journal for October 28th and December 9th, 1853, where I have attempted to answer some of the objections that were then raised against the Act?

Your correspondent complains that some persons, "between their dislike to the parish doctor and their objection to pay their own", neglect vaccination altogether. This seems to me to divide the children vaccinated into two classes, viz., private and parish; and I cannot discover in it so great a grievance as your correspondent appears to do. However, the chief cause of complaint appears to be, that "some who are not patients of the parish doctor, do have their children vaccinated by him; and that is the thin edge of a wedge to split off the former medical attendant;" etc.

Having held a large Union district, with a vaccination appointment, for the last twelve or fourteen years, I hope I am not the only "parish doctor" who can altogether deny any such "mean" and "dishonourable" conduct as is here attributed to us. With equal truth I might imagine a *private* practitioner going round one of the parishes in my district, and persuading the poor not to take their children to Mr. —— for vaccination, seeing that he was only the "parish doctor". Will any one say that this has never been done? I feel satisfied that, with very few exceptions, and with an honourable man as public vaccinator, no man need be afraid of losing his patient *permanently* in the manner described by your correspondent, or even *temporarily;* and for this reason, that the usual plan of carrying out public vaccination is to cause the children to assemble together in the village school, or some other convenient place; and that it seems highly improbable that any respectable patients would submit to mix with the motley groups usually assembled there.

I am fully aware of the imperfections of the present Act; but I contend that, in any amendment of it, provision should be made that the children of all those who usually apply to the *union surgeon* in case of ordinary sickness, should be entitled to *gratuitous* vaccination from him only, leaving it optional with them (as it now is) to *pay* any other legally qualified man they may prefer. I am, etc., H. Terry, Jun.

Northampton, Nov. 15th, 1859.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

Lavies, Joseph C., M.D., Warwick Road, on Nov. 17.
Spackman, F. R., M.D., Harpenden, on Nov. 21. (Stillborn.)
Speer, Stanhope T., M.D., Cheltenham, on Nov. 21.

Of daughters, the wives of—

Andrews, Henry C., M.D., Oakley Square, on Nov. 15.
Dauglish, J., M.D., Tunbridge Wells, on Nov. 9. (Stillborn.)

MARRIAGES.

Hunt, John, Esq., Surgeon, of Tachbrook Street, Pimlico, to Matilda J. C., third daughter of A. Goold, Esq., of Belle Vue, Forest of Dean, at St. John's, Westminster, on Nov. 15.
Neill, James, Esq., Stone of Morphie, Montrose, to Victoria, daughter of *George Webster, M.D., Dulwich, at St. Giles's, Camberwell, on Nov. 16.
Staunton, George, Lieut.-Col. Cape Mounted Rifles, to Henrietta, youngest daughter of the late Bransby B. Cooper, Esq., F.R.S., Surgeon, at Hemel Hempstead, on Nov. 15.

DEATHS.

Carnegie, John, M.D., at Wimborne Minster, on Nov. 16.
Clifton. On November 6th, at Freiburg, Baden, Anthony C. Clifton, Esq., late of Welwyn, eldest son of *N. Clifton, Esq., Islington.
Leonard, Isaac, Esq., Surgeon, Bristol, aged 63, on Nov. 16.

APPOINTMENTS.

Alison, Scott, M.D., elected Physician to the Consumption Hospital at Brompton, in the room of Theophilus Thompson, M.D., resigned.
Barrett, Thomas, M.D., elected Mayor of Bath.
Bree, C. R., M.D., elected Physician to the Essex and Colchester Hospital.
Garrington, W. H., Esq., Surgeon, elected Mayor of Portsmouth.
*McCarogher, Joseph, M.D., elected Mayor of Chichester.

PASS LISTS.

University of London. Second M.B. Examination, 1859. The following is a list of candidates who obtained the degree of Bachelor of Medicine at the recent examination:—

Adams, Samuel Hoppus, University College
Crowfoot, William Miller, St. Bartholomew's Hospital
Davis, Theodore, St. Bartholomew's Hospital
Gasquet, Joseph Raymond, University College
Hill, Matthew Berkeley, University College
Jones, Philip Sydney, University College
Liddon, William, King's College
Marriott, Charles Hayes, University College
Moxon, Walter, Guy's Hospital
Robbs, William Edward, King's College
Sanson, Arthur Ernest, King's College
Simpson, Henry, University College
Thompson, Edmund Symes, King's College

Royal Colleges of Physicians and Surgeons of Edinburgh. The following gentlemen, having completed the course of study, and undergone the examinations prescribed for obtaining the double qualification, were admitted as Licentiates of both Colleges, on November 18th:—

Maclagan, D. P., Edinburgh
Moore, Michael J., Belfast
Reid, Patrick R., Kildare
Shaw, John C., Ceylon
Thom, Alexander, Edinburgh

Apothecaries' Hall. Licentiates admitted on *Thursday, November 17th,* 1859:—

Bankart, James, Leicester
M'Cann, John, Tonyn, county Longford, Ireland
Mawley, A., Birmingham
Taylor, J., Emsworth, Hants
White, E., Birmingham

The following gentlemen also, on the same day, passed their first examination :—

Braddon, Charles H., Upton-on-Severn, Worcestershire
Haynes, A. L., Evesham
Lovegrove, J. F., Maidenhead

HEALTH OF LONDON—NOVEMBER 19th, 1859.

[From the Registrar-General's Report.]

	Births.	Deaths.
During week ..... {Boys .. 958 / Girls .. 902}	1860 ..	1233
Average of corresponding weeks 1849-58..	1526 ..	1225

The cold and fogs of the week attacked the respiratory organs. The deaths from bronchitis, were 138; from pneumonia, 64, principally among children; from phthisis, 157; from scarlatina, 96; from diphtheria, 9; from small-pox, 29. Eight nonagenarians are returned as having died. Of bricklayers, 5 died in the week, of bricklayers' wives, 5, of bricklayers' children, 5; of carpenters, 9 died, of carpenters' wives, 6, of carpenters' children, 22; of masons, 2 died, of masons' wives, 2, of masons' children, 3; of painters, 4 died, of painters' wives, 3, of painters' children, 13; of plasterers, 2 died, of plasterers' wives, 2, of plasterers' children, 2.

Barometer :

Highest (Sun.) 30·209; lowest (Wed.) 30·085; mean 30·150 in.

Thermometer :

In sun—highest (Sun. & Sat.) 58°; lowest (Tues.) 41°.
In shade—highest (Sat.) 49°; lowest (Mon.) 25·5°.
Mean—37·6°; difference from mean of 43 yrs.—5.1°.
Range—during week, 23·5°; mean daily, 15·9°.

Mean humidity of air (*saturation*=100), 89.

Mean direction of wind, variable.—Rain in inches, 0.

University of St. Andrews. The following gentlemen have been elected as examiners for medical degrees for the year 1860, in addition to Dr. Day, the Chandos Professor of Anatomy and Medicine; and Mr. Connell, the Gray Professor of Chemistry (who is assisted by Dr. Heddle).

In Medicine : W. T. Gairdner, M.D., Lecturer on the Practice of Medicine, and on Clinical Medicine, Edinburgh; Alexander Wood, M.D., President of the Royal College of Physicians, Edinburgh.

In Surgery : George Buchanan, M.D., Surgeon to the Royal Infirmary, Glasgow; John Struthers, M.D., Assistant-Surgeon to the Royal Infirmary, Edinburgh, and Lecturer on Operative Surgery.

In Midwifery and the Diseases of Women and Children. A. Anderson, M.D., Professor of Medicine in the Andersonian University, Glasgow; J. Matthews Duncan, M.D., Lecturer on Midwifery, Edinburgh.

Medical Society of London. On Wednesday evening last, Dr. F. W. Pavy delivered the first of a course of three "Lettsomian Lectures" on "Certain Points connected with Diabetes." The other two lectures will be given on November 30th and December 7th, at half-past eight P.M. The hour of the ordinary meetings of this Society has recently been changed from eight to half-past eight P.M.

TO CORRESPONDENTS.

POSTAGE OF MANUSCRIPT AND PRINTED MATTER.

Any amount of manuscript or printed matter, singly or together, provided it contains nothing in the form of a written letter, is transmitted through the post, in packets *open at the ends*, at the following rates: not exceeding 4 ounces, one penny; above 4 and not exceeding 8 ounces, twopence; above 8 ounces and not exceeding 1 pound, fourpence; for every additional half-pound or under, twopence.

Communications have been received from:—Mr. Leonard; Dr. James Russell; Mr. J. Lang; The Medical Registrar; Dr. John Gairdner; Dr. Goode; Dr. F. Needham; Mr. J. Capes; Dr. G. R. Hilliard; Dr. Skinner; Mr. Harrinson; Mr. G. May, jun.; Dr. J. B. Pitt; Mr. W. Copney; Dr. Crossby; Mr. Holmes Coote; Dr. Mahood; Mr. Rumsey; Philalethes; Mr. Girvan; Dr. Mulock; Mr. T. Holmes; Dr. C. Handfield Jones; Dr. C. M. Durrant; Dr. Beale; and Mr. J. V. Solomon.

BOOKS RECEIVED.

[* *An Asterisk is prefixed to the names of Members of the Association.*]

1. The Nature and Treatment of Gout and Rheumatic Gout. By Alfred Baring Garrod, M.D., F.R.S. London: Walton and Maberly. 1859.
2. Blood-Disease. By J. Vaughan Hughes, M.D. London: Churchill. 1859.
3. On the Curative Treatment of Paralysis and Neuralgia and other Affections of the Nervous System with the Aid of Galvanism. By H. W. Lobb. Second Edition. London: Baillière. 1859.
4. The Practice of Hiring Wet Nurses (especially those from the "Fallen") considered as it Affects Public Health and Public Morals. London: John Churchill. 1859.

ADVERTISEMENTS.

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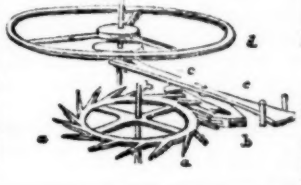
"It is, in truth an inexhaustible mine of clinical and statistical information upon all subjects connected with practical midwifery. The details of practice are particular, without being tedious or unnecessarily minute."—*Dublin Hospital Gazette.*

London: John Churchill, New Burlington Street.
Dublin: McGlashan & Gill, 50, Upper Sackville Street.



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